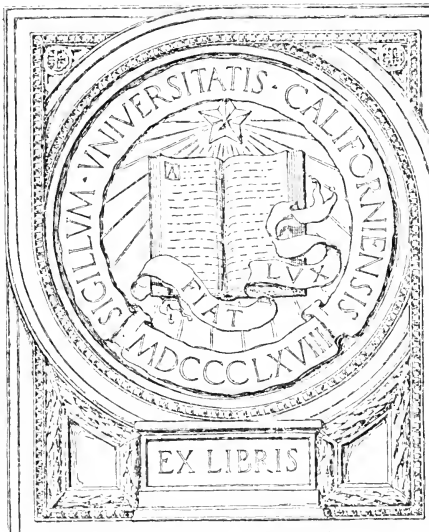

REPORT

OF THE

EXAMINATION

OF THE

SCHOOL SYSTEM

OF

BRIDGEPORT, CONNECTICUT

CONDUCTED BY

James H. Van Sickle

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SPRINGFIELD, MASS., February 20, 1913.

To the Special Committee on Investigation of the School System,

Bridgeport, Conn.

GENTLEMEN:—I have the honor to present herewith my report upon the condition and needs of the schools of your city. In making this investigation, I have been assisted in portions of the work as follows:

In comparing the expenditures for schools in Bridgeport with those of other cities, by Dr. Leonard P. Ayres, Director of the Division of Education, Russell Sage Foundation, New York City.

In the study of the City Normal School, by Dr. Andrew W. Edson, Associate Superintendent of Schools, New York City.

In the study of the High School situation, by Dr. Henry S. West, of the College for Teachers, University of Cincinnati, serving as a city assistant superintendent of schools, assigned to high school supervision.

In the study of the work in history in the grades and the High School, by Mr. Wilbur F. Gordy, specialist in history, Hartford, Conn., formerly Superintendent of Schools, Springfield, Mass.

In the study of industrial conditions, by Mr. Egbert E. MacNary, Supervisor of Manual Training and Principal of the Vocational School, Springfield, Mass.

In the study of arithmetic work in the grades, by Mr. Edwin Hebden, Director of the Bureau of Statistics and Research, Department of Education, Baltimore, Md.

In the study of language work in the grades, by Mr. Edward H. Webster, Head of the Department of English in the High School of Commerce, Springfield, Mass.

Without the aid of these men, each of whom is an expert in his particular field, it would have been impossible for me, within the time available, to make sufficiently extended observations in all of the fields covered by this report to give warrant for the positive recommendations which I am now able to present for your consideration. I have, however, spent many days in your schools and have given personal attention to every phase of the school work here discussed. Therefore, while making grateful acknowledgement of the indispensable aid which I have received from each of my assistants, I assume full responsibility for every portion of this report.

In making my report, I desire to call your attention at the outset to those findings and recommendations which seem to me of greatest importance. The subjects mentioned in section I are treated at greater length in the pages which follow, along with a number of others which have seemed to me worthy of consideration.

Such a report as this must necessarily mention defects before it can propose remedies. If more space seems to be taken in setting forth the shortcomings of the school system than in commendatory observations it is not because of any lack of excellent features to commend. The schools are well-organized, considering the serious financial limitations under which they have been conducted. Much has been accomplished in the face of almost insurmountable obstacles, and a well-knit, coherent system exists which may be depended upon to respond to all reasonable demands, provided proper financial backing is given. When the rapid growth of the schools is considered, with their constant demands upon a too limited supervisory force for administrative adjustment and re-adjustment, it is not surprising that some matters of importance have lacked attention.

Very truly yours,

JAMES H. VAN SICKLE.

I. PRELIMINARY COMMENTS AND RECOMMENDATIONS.

Expenditures.

The expenditures for education in Bridgeport are low. When a growing city attempts, as Bridgeport has done, to meet all its needs for new school buildings out of the annual tax levy, other school needs are bound to suffer. Future generations may properly be allowed to share the cost of improvements as permanent as schoolhouses. Not enough schoolrooms are provided and they are not adequately supplied with textbooks and other teaching equipment. Salaries of teachers are not high enough and are not so regulated as to furnish adequate reward for superior service. A higher maximum salary, if awarded upon the basis of merit, and not merely length of service, would prove a good investment. The facilities which are furnished the superintendent for the oversight of the work in the growing system of schools for which he is held responsible are notably deficient. His office force should be increased and he should have additional assistance in the field. While there are things in the school system that must be criticized adversely, there are many other things that command approval. Many of the defects to which attention is called owe their existence to the limited appropriations upon which the schools have had to depend.

Overcrowding breeds retardation and early elimination of pupils from school. Lack of sufficient clerical force in the superintendent's office makes it impossible to keep and utilize such records as are needed in studies looking toward improvement.

There are far too many pupils in the lower grades in proportion to the whole number in school. This means that many are repeating grades. Too many leave school altogether before they have received more than a modicum of education. Bridgeport's rank is very low in these particulars. The city cannot afford to give such meagre training to its future citizens.

Teaching and Supervision.

The spirit of the teaching force is notably good. The teachers are co-operative, loyal to their supervising officers and faithful in following out directions. They are doing team work. All this makes for the good of the service. Teachers do not demand more of their pupils in the matter of obedience to properly constituted authority than they themselves are willing to exemplify in their own conduct.

The demands of office routine have so encroached upon the time needed for professional supervision that it has not been possible to raise the work in all subjects to the level attained by those that are best taught. For instance, in the grades the classroom work in geography is good, while that in history is extremely poor. There is no reason to suppose that teachers who do well in geography would be unable to do equally well in history if there had been time to give that subject the same effective supervision that geography has evidently received.

The discipline of the schools is good. The attitude of pupils toward their teachers is one of confidence and respect. At first glance the order in some schoolrooms seems rather too rigid, yet stern repression is not in evidence.

The greatest strength in teaching, as observed in classroom after classroom, is plainly in drill rather than in reasoning. Here we see one disadvantage in limiting admission to the teaching force to local candidates trained in the City Normal School. There is too much sameness of method, too little variety in procedure. All have learned in the same school to do things in the same way. By employing some teachers trained elsewhere, the city would not necessarily secure individuals of greater personal power; the advantage would lie rather in the discussions that would arise through the comparison of ways learned elsewhere with those employed by the locally trained teachers. Practically all of the teachers in Bridgeport have received their training in the local training school. No matter how good the ideals and practices of the school may be, there must be relatively few differences of opinion among its graduates leading to discussion, and as a consequence less thought must be put into the work than where teachers who have learned different ways, or who have worked out individual ways of doing things, are working side by side with the uniformly trained home product. Teachers but begin their training in the normal school; their after-training is equally important. Conditions most favorable for good after-training are those which force teachers away from mere routine and stimulate them to do their own thinking.

Course of Study.

As an outline of work, the course of study is ingenious in arrangement and convenient for reference. The outline of the requirement of a grade in any given subject may be seen at a glance, and the statement of requirement is terse but not sufficiently definite unless supplemented by explanatory matter. The outline has been reduced to its lowest terms, and a syllabus of each subject, indicating more fully the ground to be covered and the ends to be sought in teaching should accompany the outline. The appendix to the course contains such a syllabus for grade III geography, together with several pages of suggestions on the teaching of arithmetic throughout the grades, and brief directions for teaching spelling. It is probable that similar directions for the teaching of the other subjects in the curriculum have been given in teachers' meetings, but if these were summed up for each subject in a printed syllabus, the effect would be more permanent and teachers new to the city would become more immediately effective.

In several subjects the textbooks form the basis for the work, and certain pages in the book are assigned to certain grades. If the

requirements for each grade were stated under subject headings, and teachers directed to teach given phases of the subject, rather than certain pages of a textbook, there would be greater incentive to research and supplementary study of other textbooks.

In geography, grades V to VII, time might be saved if the syllabus were to make mention of the more important topics to be studied and to indicate the desirability of a more cursory study of unimportant detail. In the review in geography outlined for grade VIII, this plan has been approximated and the relative importance of the study of the various countries is indicated by the time allotted to them.

The division of the time allotted to a subject in the daily program between study and recitation seems admirable in theory, and its results so far as they were observed in practice call for commendation.

Reading.

As an exclusive method, the method of teaching beginning reading employed in the first grades of Bridgeport is not the best now available.

The method employed in teaching children to read has a very direct bearing upon their future progress in the schools. During the first two or three years of a child's school life, proficiency in reading is the main requisite for promotion from grade to grade, and a pupil's progress throughout the school course is influenced largely by his power to read and interpret the books to which he has access.

By means of the most approved modern methods, it is possible for five-year old children to learn to read in a surprisingly short period of time, and without apparent mental or nervous strain. They proceed naturally from the oral repetition of a familiar rhyme, poem, or story, to the recognition of the printed symbols in which it is told on blackboard or chart, and they thus become acquainted with many sentences and words that stand for familiar ideas. The printed selection is, therefore, not merely "a sequence of word sounds and word names" to them, but it "has a distinctive total sound appearance and meaning." In this case the early vocabulary is not limited by the necessity for using phonetic words, and in consequence a large percentage of first grade pupils are able by the middle of the first year in school to read with much pleasure to themselves the delightful illustrated story books that publishers are supplying.

The work in phonics is not allowed to interfere with this early recognition of sentences and words, but is pursued as a separate study until needed by the children as a key to the multitude of unfamiliar words that they meet as they delve into school and library books.

From the first, attention is centered upon the meaning of what is read, and the context serves as an aid to word recognition. Children

are encouraged to read fluently, and to this end short phrases printed on slips of paper are read by pupils at a glance.

Children do not begin to apply their knowledge of phonics until they have acquired power to recognize separate words and phrases with considerable rapidity.

One of the most effective of the modern methods used in teaching children to read is thus briefly outlined because of the conviction that strong and intensive work in this subject during the first school year, supplemented by a generous supply of suitable and interesting reading matter, must tend to decrease retardation in the schools of any city.

Geography.

The work done in this subject deserves special commendation. It was during the geography hour that the wisely conceived plan of dividing the time between preparation and recitation was observed at greatest advantage. During the first half of the period, the children, with their books open before them, read and discussed with the teacher the lesson for the following day. There was no stiffness and formality about this exercise. In all the geography classes visited, there existed a very pleasant relation between teacher and pupils. The conditions for learning, except as to over-large classes, were at their best. After a pleasant, and in most cases, lively discussion of the lesson for the next day, books were closed and the recitation of the lesson learned the day before was taken up. In all of the principal subjects, this study-recitation plan is prescribed. Not the least of its benefits is the tendency to reduce home study to a minimum.

In locative geography, the aim is to have the children fix in their minds such a picture of the map that recitations can be made from the mental picture. Wall maps are often used, however, in this study of locations, and some excellent rapid competitive drill exercises were observed, each lasting about five minutes.

Cause and effect elements in geography receive due attention, and the study of grand divisions is conducted in accordance with a carefully prepared outline.

Arithmetic.

The work in arithmetic is carefully planned and the teaching evidently effective. The emphasis is placed upon fundamentals, and accuracy in abstract work is strongly emphasized. The course of study also lays stress upon the intelligent solution of concrete problems. When one considers the examination results in this subject, as set forth in another part of this report, the question arises whether the efforts which have been put forth to attain the high standard in abstract work which the schools have achieved have not resulted in fixing too high a standard for promotion in this subject, particularly

in the lower grades, thus swelling the number of retarded children. For instance, in the Bridgeport course of study for first grade, all the combinations and separations through twelve are required, whereas in most other school systems it is not customary to go beyond ten, and in many cities no formal work in arithmetic is required till the beginning of the second grade, even though children do not enter till they are six years of age. The Bridgeport requirements in second and third grade are also more exacting than in the average city. This is a question that seems to call for further investigation.

English.

There is much in the work in English that is commendable, but for the purpose of showing the means by which the present course may be strengthened, emphasis in this report is placed upon apparent weaknesses. The work in English is divided into Language (punctuation and technical grammar), Composition (oral and written), and Spelling. Each is considered as a separate subject rather than as a part of a unified whole with self-expression as the end in view. Much time and effort are thus wasted. By considering punctuation, technical grammar and spelling as practical aids in writing and speaking, and not as subjects to be mastered for facts, greater efficiency could be secured in the study of English. To accomplish this, two things should be done. (1) Detailed directions should be given to the teachers now in the system in the form of an English syllabus designed primarily to show the most modern methods of teaching composition and the relation of this subject to technical grammar, punctuation and spelling; (2) A thorough course in English composition and literature should be required of all students in the Normal School. Such a course would give the future teachers a breadth of training and a depth of scholarship that are absolutely essential if efficient, original, and flexible methods are to be expected of them.

Medical Inspection and Dental Clinic.

One school physician and two nurses are employed by the City Department of Health. They devote their entire time to the work in the schools. During the course of the year one routine inspection of each school is made. The eye-lids, throat, skin and hair of each child are examined. Each child is also examined for defective nasal breathing, hypertrophied tonsils, tubercular lymph nodes, chorea, orthopedic defects, malnutrition, defective teeth, defective palate, defective vision, and defective hearing. The Department of Health maintains a clinic to which the children, whose parents are unable to employ a private physician, are referred. During the second round of visits to the schools the school physician gives talks on personal hygiene in addition to the work of inspection. The nurses devote themselves chiefly to the follow-up work in the homes, but they may be called into the schools to assist in the treatment of cases at the discretion of the medical inspector. They are also present at the clinics to assist the doctors.

The Board of Education has made provision for an experimental dental clinic on advanced preventive and educational lines. The plan involves actual surface treatment of children's teeth once a month by a dental nurse. An appropriation of $5000 has been made, by means of which the plan is to be tried out in one school. In this one school the teeth of those children in the first five grades, whose parents are too poor to pay for dental service, will be filled by the graduate dentist in charge. No doubt bad health is partly responsible for the slow progress of many children in their studies. Bridgeport is to be commended for recognizing the fact that the human mechanism cannot reach its full efficiency unless all of the parts are in good working order, and for planning to give the child's body the first consideration instead of the last.

Industrial Education.

There is great need of developing and extending the limited high school opportunities now open to grammar school graduates, and of differentiated courses in the grades immediately below the high school, particularly in the interest of those pupils who will not have the advantage of a high school course. An industrial city like Bridgeport has especial need of such adjustment in its school program, both in elementary grades and in high school, as will aid its boys and girls, when they enter the industries, to start with the best possible prospects of advancement. This important function of the schools is more fully discussed in connection with "The Industrial High School" and "The Industries." It is not assumed nor suggested that all of the recommendations made in these two sections of the report should be acted upon at once. A modest beginning should be made in those directions where the needs seem to be most immediate and pressing, subsequent expansion being based on continued study and experimentation.

II. THE SCHOOL BOARD.

Authority.

The Board of Education is bi-partisan and consists of twelve members. Nomination is equivalent to election. Each of the dominant political parties nominates two members, thus the selection of board members is by party rather than by people.

The Board is divided into four committees, Schools (teachers), Finance, Schoolhouses, and Supplies.

In the appointment of teachers the Board takes the initiative, not the Superintendent, though in practice his approval is necessary for appointment. There is considerable local pressure for the appointment of residents or the friends of residents.

The Board has full control of all school matters, including the purchase of sites and the erection of buildings. It is dependent upon the City Council, however, for appropriations, which are based on estimates submitted annually.

Organization of the Schools.

There are centrally located schools having eight grades, and others with only the lower grades which serve as feeders to the full eight grade schools. The elementary schools are organized on the basis of 45 to 50 pupils per teacher, and they average about 46 to 47 per teacher. The per capita cost is low, being less than $27.

The supervision is insufficient, yet in this item there has been a healthy growth. About ten years ago an itinerant substitute was appointed to take the room taught by the principal of a small building about one day in two weeks, giving the principal this time to inspect the other rooms in her building. Last year this plan was extended so as to provide one-half day's teaching of the principal's class in each of the small buildings, alternating morning and afternoon sessions by weeks.

Notwithstanding the growth of the system, the administration office is furnished only one general office clerk and one supply clerk and one assistant whose time is mostly taken at the telephone switchboard. The time of the general office clerk is so fully taken up by the general business of the Board that he can give almost no time to the superintendent's work.

There are special supervisors, one each in music, drawing, writing, and physical education.

Comments and Recommendations.

1. All nominations of teachers for appointment should be made by the Superintendent of Schools. Judging the relative qualifications of teachers is an expert service for which he is paid, and the community is entitled to have this service rendered by him under condi-

tions which will insure untrammeled judgment on his part. It is the Board's right to disapprove any nomination so made, but neither the Board as a whole, nor any member of the Board, should take the initiative in this highly professional matter of selecting teachers. When they do so, they cannot, in the nature of things, secure the best service in this vital matter which the Superintendent is capable of rendering; for often, if he loves peace, he will be tempted to remain silent rather than cause friction and dissension by opposing the appointment of a mediocre candidate who has been nominated by a member of the governing board.

2. The grouping of the upper grades in centrally located schools is to be commended. This grouping should be still further emphasized when the building now occupied by the High School becomes available for grade work. This feature has received mention in another part of this report, as has also the overcrowding of schoolrooms.

3. The Superintendent should have added to his force in the field, one assistant and a supervisor of primary work. He should have added to his office force a stenographer and another clerk trained in statistical methods. The plan by which principals of small buildings secure time for supervision has much to commend it.

4. The collection and accounting of the children's savings appears to encroach to a wholly unwarranted extent upon the too limited time which a principal has for supervision, and, as conducted, is an unreasonable burden upon the teachers. If continued, the system should be changed to one which would conserve the time of principals and teachers by utilizing the willing aid of outside organizations. Such arrangements have been made in other cities.

III. THE FINANCIAL SUPPORT OF THE SCHOOL SYSTEM.

In a very real sense, education can be bought and paid for. The perpetual problem of the community is how many of its children it is willing to afford to educate and how well. Within limits that have never yet been reached anywhere each community may have for its children as much and as good education as that community is able and willing to pay for. How much and how good education it actually gets, depends, first, on how much money it spends, and, second, on whether or not it uses each dollar appropriated so as to get the best and largest educational return.

Unfortunately, no standards exist whereby we may exactly measure all the returns on the educational investment of a city. But we can compare the school expenditures of one city with those of other cities similar in size and discover whether the first city is paying more or less than the others for the education of each child and for different educational purposes. Such a comparative analysis has been made of the school expenditures of Bridgeport.

School Receipts.

Bridgeport is a very rapidly growing city of something more than 100,000 population and spending each year for public schools over a third of a million dollars. This money comes from three sources,—local taxes, state funds, and tuition fees. Roughly speaking, of every one hundred dollars received, 86 come from local taxes, 13 from state funds and 1 comes from tuition fees.

Expenditures in Bridgeport and Eleven Other Cities.

For the purposes of the present study, data as to school expenditures have been secured from Bridgeport and the eleven other cities most nearly of the same population for which the figures are available in the reports of the United States Bureau of Education.

The comparison of so many cities selected solely on the basis described avoids the danger of being unfair which might arise if only three or four cities were compared or if specially rich or unusually progressive ones were chosen for the purpose. In order of size these twelve cities are the following:

City	Population in 1910
Tacoma, Wash.	83,743
Springfield, Mass.	88,926
Lynn, Mass.	89,336
Salt Lake City, Utah	92,777
Camden, New Jersey	94,538
Bridgeport, Conn.	**102,054**
Spokane, Wash.	104,402
Cambridge, Mass.	104,839
Grand Rapids, Mich.	112,571
Dayton, Ohio	116,577
Omaha, Neb.	124,096
New Haven, Conn.	133,605

Table I is the fundamental table on which most of the following comparisons are based. The figures for Bridgeport are for the school year 1911-1912. Those for the other cities are from the report of the United States Bureau of Education for 1911. They are the latest figures available. They refer only to current expenses and do not include payments for new buildings, grounds, etc.

TABLE I—FUNDAMENTAL TABLE—POPULATION, AVERAGE ATTENDANCE IN DAY SCHOOLS, AND EXPENDITURES FOR SCHOOL PURPOSES, IN TWELVE CITIES.

Cities	Population 1910	Average attendance day schools	Board of Education and business offices	Superintendent's office	Salaries and expenses of supervisors	Salaries and expenses of principals	Salaries of teachers	Text books	Stationery, supplies, other instruction expenses	Wages of janitors and other employees	Fuel	Water, light, power, janitors' supplies, etc.	Maintenance, repairs, replacement of equipment, etc.	Other expenses	Total expenses
Tacoma	83,743	10,733	$10,157	$9,048	$6,547	$41,313	$312,234	$5,480	$7,898	$26,530	$12,819	$7,926	$24,341	$10,117	$474,410
Springfield	88,926	12,449	3,847	8,945	10,400	31,968	346,988	16,036	35,638	42,554	26,695	11,878	30,509	4,319	569,777
Lynn	89,336	9,967	6,834	5,033	6,370	23,412	223,365	8,072	10,466	25,005	10,473	2,569	11,840	5,282	338,721
Salt Lake City.	92,777	14,980	21,204	10,596	22,375	48,510	391,549	12,677	19,708	35,801	15,229	12,654	55,806	5,195	651,304
Camden	94,538	10,688	5,160	10,063	8,400	29,500	274,825	12,830	17,331	34,642	15,143	4,344	18,714	8,904	439,856
Bridgeport	**102,054**	**13,680**	**4,090**	**4,450**	**7,100**	**34,364**	**233,580**	**6,846**	**5,695**	**20,288**	**18,127**	**7,589**	**20,694**	**3,886**	**366,708**
Spokane	104,402	13,636	15,762	6,300	7,750	53,906	442,098	22,045	29,519	38,494	22,396	18,095	12,983	3,905	673,253
Cambridge	104,839	14,376	6,949	8,570	8,434	40,640	340,484	10,575	23,336	43,743	19,592	4,537	26,306	2,200	535,366
Grand Rapids..	112,571	13,622	11,825	11,265	6,633	46,605	360,026	4,482	23,198	40,407	13,546	9,919	23,631	713	552,250
Dayton	116,577	12,897	14,535	6,921	11,227	38,450	334,853	165	1,000	40,894	23,385	18,565	50,382	8,803	549,180
Omaha	124,096	15,280	22,264	9,388	7,140	49,850	375,951	8,136	11,291	45,772	25,967	10,312	57,937	23,061	647,069
New Haven....	133,605	20,797	8,750	3,800	13,950	24,900	423,686	29,473	29,034	48,964	35,348	7,409	30,855	3,888	660,057

What the Schools Cost for One Child for One Year.

The amount that a community feels that it can afford to pay for the education of each school child each year is in some measure an index of its financial resources and in much larger measure an index of its estimate of the value of education. The amounts that different cities pay vary over a considerable range. In comparing these amounts for the twelve cities entering into this study, the total sum paid for school support during the year has been divided by the number of children in average attendance in all day schools. Average attendance has been chosen as a basis for these per capita computations because the figures expressing it are much more exact than are those for enrollment. Data for evening schools have been excluded for greater clearness and because their inclusion would have but slight effect on the results.

The annual per capita costs of the schooling of the children in average attendance in the day schools of the twelve cities are shown in Table II and in graphic form in Diagram I.

Table II. Annual per Capita Cost for Children in Average Attendance in the Day Schools of Twelve Cities.

Spokane	$49.37
Springfield	45.77
Tacoma	44.20
Salt Lake City	43.50
Dayton	42.58
Omaha	42.34
Camden	41.15
Grand Rapids	40.54
Cambridge	37.24
Lynn	33.99
New Haven	31.74
Bridgeport	26.81

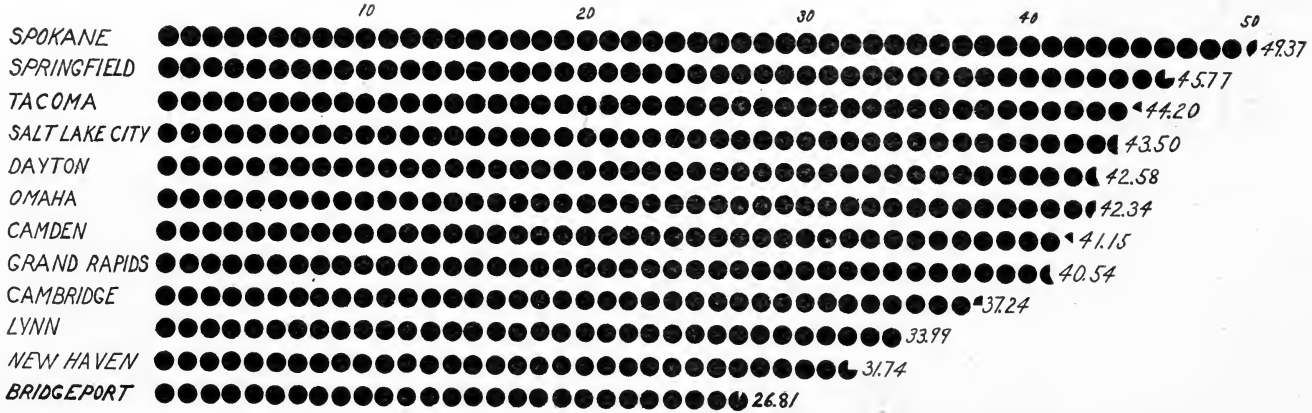

Diagram I.—Annual Per Capita Cost For Children in Average Attendance in the Day Schools of Twelve Cities.

Spokane pays almost twice as much per child per year as Bridgeport. The annual per capita cost for the average of the other eleven cities excluding Bridgeport, is $41.13. If Bridgeport spent as much on the education of each child as does the average city, she would be forced to increase her per capita expenditure by more than 50 per cent. The added cost for each child would be over $14, while the added expense for the entire city would amount to nearly $200,000 per year. This added expenditure would not lift Bridgeport to a high rank among her sister cities but would merely carry her up as far as the average.

The Amount and Quality of Teaching per Child.

In general, two factors largely determine the amount and quality of teaching received by each child in attendance. These are first, the size of class, and second, the salary of the teacher. In many individual instances this rule does not hold, but in the long run instruction suffers in over-crowded classes, and low salaries secure poor teachers. The salaries of teachers and the sizes of classes should be studied in relation to each other because together they largely determine the value of the results secured. Table III and Diagram II give the figures for the 12 cities.

Table III. Average Annual Salary and Average Number of Pupils per Teacher in Twelve Cities.

City	Salary	Pupils
Spokane	$1000	31
Tacoma	958	33
Dayton	801	31
Grand Rapids	800	30
Cambridge	792	33
Salt Lake City	777	30
Springfield	754	27
Omaha	744	30
Lynn	723	32
Camden	718	28
New Haven	690	34
Bridgeport	**654**	**38**

The figures presented by the table and diagram show that in Spokane, at the head of the list, the average salary is $1000, while the average number of pupils per teacher is 31. This means that if teaching be measured in terms of money cost the average child gets $32 worth of teaching during the year. The corresponding figures for Bridgeport, at the foot of the list, show that the average child received $17 worth of teaching during the year, or little more than half as much as the Spokane child. For the eleven cities besides Bridgeport, the average teacher's salary is $796 and the average number of pupils 31, which means that in the average city each pupil

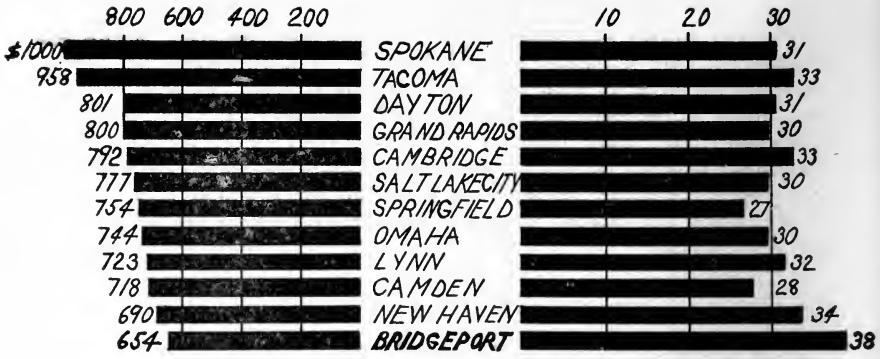

Diagram II.—Average Annual Salary and Average Number of Pupils Per Teacher in Twelve Cities.

receives $26 worth of teaching each year. As has been pointed out, such comparisons as these are not valid in individual instances but when applied to large groups of cases they throw light on the existing conditions in a truly significant way. In the present instance they show in general terms that Bridgeport children get far cheaper teaching and much less of it than the children of the other cities. *

The Amount Spent for Each Child for Each School Purpose.

The foregoing comparisons have shown that the average city spends each year more than half as much again as does Bridgeport for the education of each child. This does not mean that the Bridgeport expenditures fall below those of the average city in just the same degree for each of the 12 main purposes for which the funds are spent. For some of these the Bridgeport child gets far less than the child of the average city, while for others the disproportion is not so great. Just how much each city spends per child for each purpose is shown in Table IV.

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*Salary of teachers in elementary schools, Bridgeport:

Grade.	Minimum.	Yearly increment.	Maximum.
I	$500	$50	$800
II	500	50	750
III	500	50	750
IV	500	50	750
V	550	50	800
VI	550	50	800
VII	550	50	800
VIII	——	——	850

The lowest salary paid to an assistant in the high school is $750, and the highest $1700.

TABLE IV—ANNUAL PER CAPITA EXPENDITURE FOR EACH PURPOSE IN THE SCHOOLS OF TWELVE CITIES.

Cities	Board of Education and business offices	Superintendent's office	Salaries and expenses of supervisors	Salaries and expenses of principals	Salaries of teachers	Text books	Stationery, supplies, other instruction expenses	Wages of janitors and other employees	Fuel	Water, light, power, janitors' supplies, etc.	Maintenance, repairs, replacement of equipment, etc.	Other expenses	Total
Tacoma	$ .95	$ .84	$ .61	$ 3.85	$ 29.09	$ .51	$ .74	$ 2.47	$ 1.19	$ .74	$ 2.27	$ .94	$44.20
Springfield	.31	.72	.84	2.57	27.87	1.29	2.86	3.42	2.14	.95	2.45	.35	45.77
Lynn	.69	.50	.64	2.35	22.41	.81	1.05	2.51	1.05	.26	1.19	.53	33.99
Salt Lake City..	1.42	.71	1.49	3.24	26.14	.85	1.32	2.39	1.02	.84	3.73	.35	43.50
Camden	.48	.94	.79	2.76	25.71	1.20	1.62	3.24	1.42	.41	1.75	.83	41.15
**Bridgeport	**.30**	**.33**	**.52**	**2.51**	**17.07**	**.50**	**.42**	**1.48**	**1.33**	**.55**	**1.51**	**.29**	**26.81**
Spokane	1.15	.46	.57	3.95	32.42	1.62	2.16	2.82	1.64	1.33	.95	.30	49.37
Cambridge	.48	.60	.59	2.83	23.68	.74	1.62	3.04	1.36	.32	1.83	.15	37.24
Grand Rapids...	.87	.83	.49	3.42	26.43	.33	1.70	2.97	.99	.73	1.73	.05	40.54
Dayton	1.13	.54	.87	2.98	25.96	.01	.08	3.17	1.81	1.44	3.91	.68	42.58
Omaha	1.46	.61	.47	3.26	24.60	.53	.74	3.00	1.70	.67	3.79	1.51	42.34
New Haven.....	.42	.18	.67	1.20	20.37	1.42	1.40	2.35	1.70	.36	1.48	.19	31.74

For comparative purposes the facts presented in Table IV become much clearer when they are gathered together so as to show the relation between per capita expenditures for each purpose in the average city and in Bridgeport. This is done in Table V.

Table V. Per Capita Expenditure for Each Purpose in the Average City and in Bridgeport.

Purpose	Average City	Bridgeport	Difference
Salaries of teachers	$25.88	$17.07	—$8.81
Salaries and expenses of principals	2.95	2.51	— .44
Wages of janitors & other employees	2.85	1.48	— 1.37
Maintenance	2.28	1.51	— .77
Fuel	1.46	1.33	— .13
Stationery and supplies	1.39	.42	— .97
Board of Education office	.85	.30	— .55
Textbooks	.85	.50	— .35
Salaries and expenses of supervisors	.73	.52	— .21
Water, light and power	.73	.55	— .18
Superintendent's office	.63	.33	— .30
Other expenses	.53	.29	— .24
Total	$41.13	$26.81	—$14.32

The facts of Table V are presented in graphic form in Diagram III. The circle in outline represents the total per capita expenditure in the average city. The 12 sectors into which the circle is divided are proportional in area to the amounts expended for each of the 12 main purposes for which the school funds are spent. The portion of the surface of each sector that is shaded represents the expenditure for that purpose in the Bridgeport schools. The diagram clearly shows that in some respects Bridgeport expenditures are not far below the standard, while in others they are notably deficient.

Most striking of all is the fact that in every one of the twelve items the Bridgeport expenditures are below the average standard. Unless the Bridgeport money is spent far more efficiently than is that of other cities, this means that the Bridgeport child does not get his fair share of any single sort of educational opportunity.

How Much Bridgeport Spends for Every Dollar That the Average City Spends.

In the long run, cities, like individuals, purchase about what they pay for, not much more and not much less. Since Bridgeport spends far less than the average city of her size for every purpose of educational effort, there can be but little doubt that she is not only paying less, but purchasing less. The degree of these discrepancies between

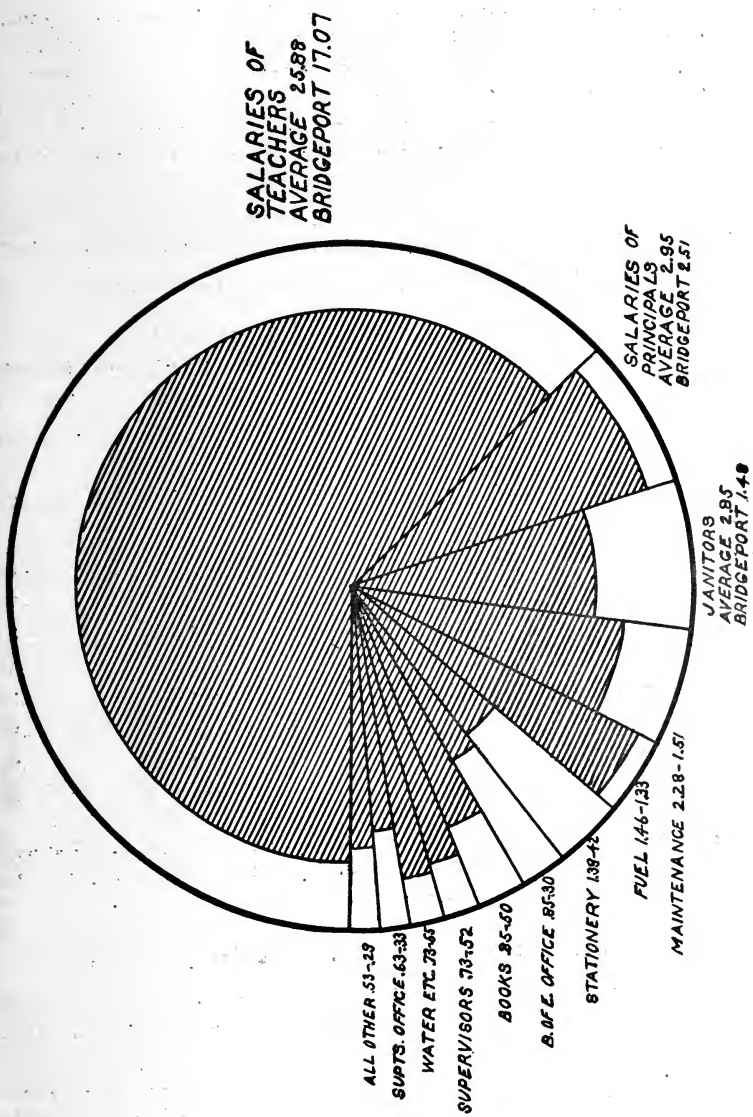

Diagram III.—Surface of Circle Represents Total Per Capita Expenditure in the Average City. Sectors Are Proportional to Amount Spent for Each of the Twelve Main Purposes for Which Funds Are Expended. Shaded Portion Represents Expenditure in Bridgeport. Under Each Heading the First Figure Gives in Dollars and Cents the Amount Spent Per Child Per Year in the Average City and the Second Figure the Corresponding Amount for Bridgeport.

the expenditures of Bridgeport and those of her eleven sister cities may be better realized by discovering the amount she spends for each purpose for every dollar spent by the average city of similar size for the same purpose. This comparison has been made in Table VI and Diagram IV. In order to make the data comparable, they have been computed on the basis of the per capita expense for each child in average attendance in the day schools.

Table VI.. Expenditure for Each Purpose by Bridgeport for Each Dollar Spent by the Average City for That Purpose.

Purpose	For each dollar the average city spends	Bridgeport spends
Fuel	$1.00	$0.91
Salaries and expenses of principals	1.00	.85
Water, light, and power	1.00	.75
Salaries and expenses of supervisors	1.00	.71
Salaries of teachers	1.00	.66
Maintenance	1.00	.66
Text books	1.00	.59
Superintendent's office	1.00	.52
Wages of janitors and other employees	1.00	.52
Stationery and supplies	1.00	.30
Board of Education office	1.00	.22
All other purposes	1.00	.55

The facts of the table are illustrated in Diagram IV, which shows in graphic form the comparative amounts spent for each purpose by the average city and by Bridgeport.

The Share of Each Citizen in City Support and School Support.

The comparisons so far made refer to the per capita expenditures for each child in school. Further light may be thrown on the situation by computing the per capita expenditures for each inhabitant of the city not only for school support but for all municipal purposes. These data are available from the report of the United States Census for 1908 presenting statistics of cities for that year. The population figures have been corrected by the data from the census of 1910. The comparison reveals the conditions presented in Table VII and Diagram V.

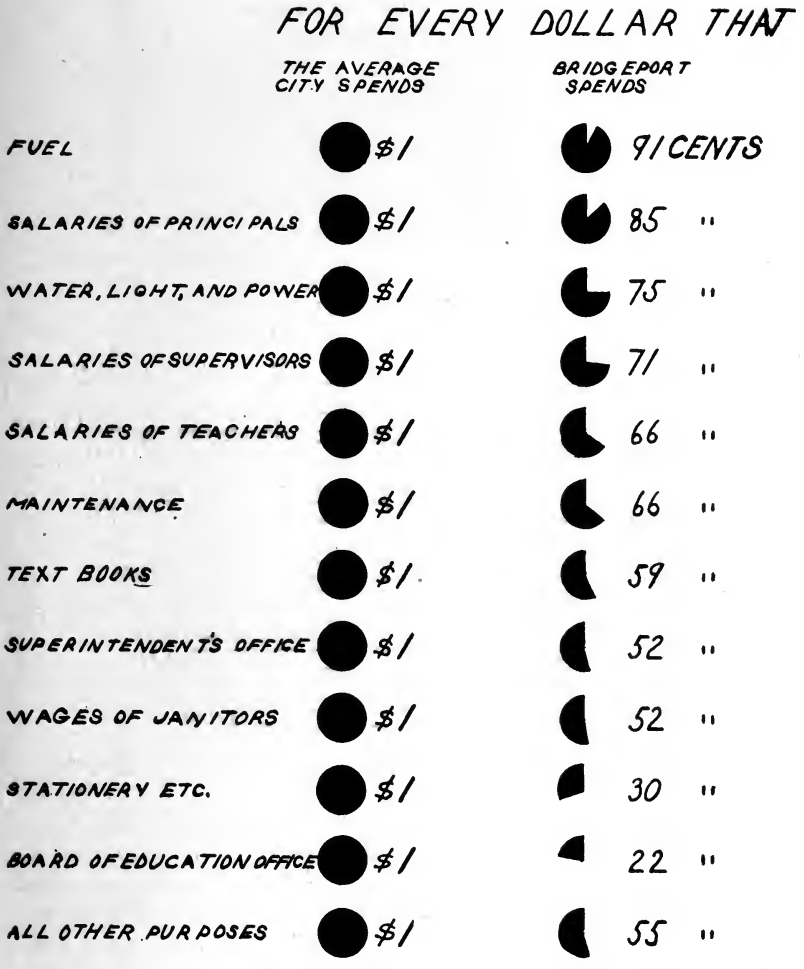

Diagram IV.—Expenditure For Each Purpose By Bridgeport For Each Dollar Spent By the Average City For That Purpose.

Table VII. Expenditures per Capita of Population for All City Purposes and For School Support. Data from Statistics of Cities, United States Census, 1908.

Cities	Per capita expenditure for all city purposes	Per capita expenditure for public schools
Springfield	$16.69	$6.17
Cambridge	15.39	4.93
Dayton	13.61	4.81
Tacoma	13.51	5.11
Salt Lake City	13.27	6.17
Spokane	13.02	5.73
New Haven	12.92	4.29
Lynn	12.76	3.85
Omaha	12.29	4.51
Grand Rapids	12.21	5.03
Bridgeport	**11.51**	**3.17**
Camden	11.18	4.65

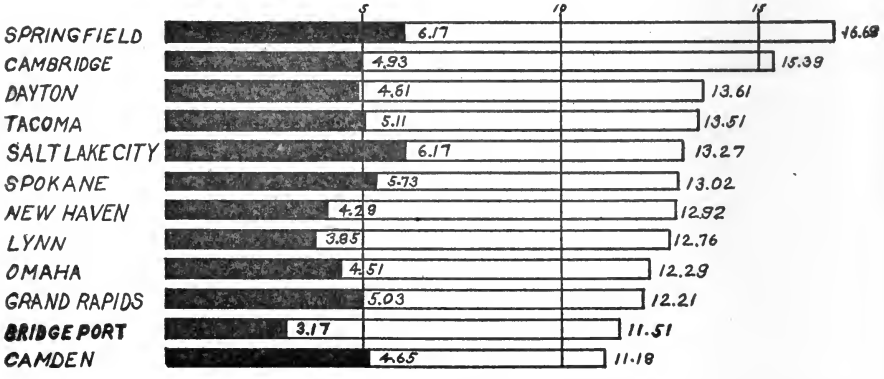

Diagram V.—Each Bar Represents Expenditure Per Inhabitant For All Municipal Purposes In That City In 1908. Black Portion Represents Expenditure Per Inhabitant For Public Schools.

The results show that Bridgeport spends less per citizen for its community activities than does any other of the cities save Camden. For the support of its schools it spends not only less per inhabitant than does any other city, but very much less.

How Each Thousand Dollars is Spent.

The figures of the fundamental table show how much money is spent for each purpose in each city, but since the cities differ in size they are not directly comparable. In order to find out not **how much** is spent in each locality, but **how** it is spent, a computation has been made to reduce all the data to a single basis and show how each city spends each thousand dollars. The results are presented in Table VIII.

TABLE VIII—EXPENDITURE OF EACH THOUSAND DOLLARS FOR THE SEVERAL PURPOSES IN THE SCHOOLS OF TWELVE CITIES.

Cities	Board of Education and business offices	Superintendent's office	Salaries and expenses of supervisors	Salaries and expenses of principals	Salaries of teachers	Text books	Stationery, supplies, other instruction expenses	Wages of janitors and other employees	Fuel	Water, light, power, janitors' supplies, etc.	Maintenance, repairs, replacement of equipment, etc.	Other expenses	Total
Tacoma	$21.41	$19.07	$13.80	$87.08	$658.16	$11.55	$16.65	$55.92	$27.02	$16.71	$51.31	$21.32	$1000
Springfield	6.75	15.70	18.25	56.12	608.99	28.14	62.54	74.69	46.85	20.85	53.54	7.58	1000
Lynn	20.17	14.85	18.80	69.12	659.48	23.83	30.90	73.82	30.92	7.58	34.95	15.58	1000
Salt Lake City..	32.56	16.27	34.35	74.48	601.18	19.46	30.26	54.97	23.38	19.43	85.68	7.98	1000
Camden	11.73	22.89	19.11	67.09	624.74	29.18	39.41	78.75	34.44	9.87	42.54	20.25	1000
**Bridgeport	**11.15**	**12.13**	**19.36**	**93.72**	**636.97**	**18.67**	**15.53**	**55.33**	**49.43**	**20.69**	**56.43**	**10.59**	**1000**
Spokane	23.41	9.36	11.51	80.07	656.69	32.74	43.84	57.18	33.26	26.87	19.28	5.79	1000
Cambridge	12.98	16.01	15.75	75.94	635.94	19.75	43.59	81.73	36.59	8.47	49.13	4.11	1000
Grand Rapids ..	21.41	20.40	12.01	84.39	651.93	8.11	42.01	73.17	24.53	17.96	42.79	1.29	1000
Dayton	26.47	12.60	20.44	70.01	609.73	.31	1.82	74.46	42.58	33.81	91.74	16.03	1000
Omaha	34.41	14.51	11.04	77.04	580.99	12.57	17.45	70.74	40.14	15.94	89.54	35.63	1000
New Haven	13.26	5.77	21.13	37.72	641.89	44.65	43.99	74.19	53.55	11.22	46.74	5.89	1000

By taking the average of the figures for the other eleven cities, we may derive from Table VIII a statement of the expenditures in the "average city" and compare it with the data for Bridgeport. This simplifies our problem and enables us to discover how Bridgeport compares with the typical or average city of similar size. The results are presented in Table IX.

Table IX. Expenditure of Each Thousand Dollars for School Purposes in the Average City and in Bridgeport.

Purpose	Average city	Bridgeport	Difference
Salaries of teachers	$629.97	$636.97	+$ 7.00
Salaries and expenses of principals	70.82	93.72	+ 22.90
Wages of janitors, etc.	69.97	55.33	— 14.64
Maintenance	55.20	56.43	+ 1.23
Fuel	35.75	49.43	+ 13.68
Stationery, etc.	33.86	15.53	— 18.33
Text books	20.94	18.67	— 2.27
Board of Education office	20.41	11.15	— 9.26
Salaries and expenses of supervisors	17.84	19.36	+ 1.52
Water, light, power, etc.	17.16	20.69	+ 3.53
Superintendent's office	15.22	12.13	— 3.09
All other expenses	12.86	10.59	— 2.27
Total	$1000.00	$1000.00	

The facts of Table IX are presented in graphic form in Diagram VI, in which the areas of the triangles are proportional to the amounts spent for the different purposes. In each case the triangle in outline represents the amount spent by the average city while the shaded triangle is proportional in area to the expenditure in Bridgeport.

The results of this comparison presented in Table IX and Diagram VI show that of each thousand dollars expended, Bridgeport spends more than does the average city for the salaries of teachers, the salaries and expenses of principals, maintenance, fuel, salaries and expenses of supervisors, and water, light, power, etc. She devotes a smaller proportion of each thousand dollars than does the average city for wages of janitors and other employees, stationery, text books, the support of the Board of Education office, the support of the Superintendent's office, and for miscellaneous expenses. In considering these comparisons, it must be carefully borne in mind that the figures do not refer to the gross amounts of money spent for these different purposes, but only to the way in which each thousand dollars spent is proportioned among the different school purposes in the average city and in Bridgeport.

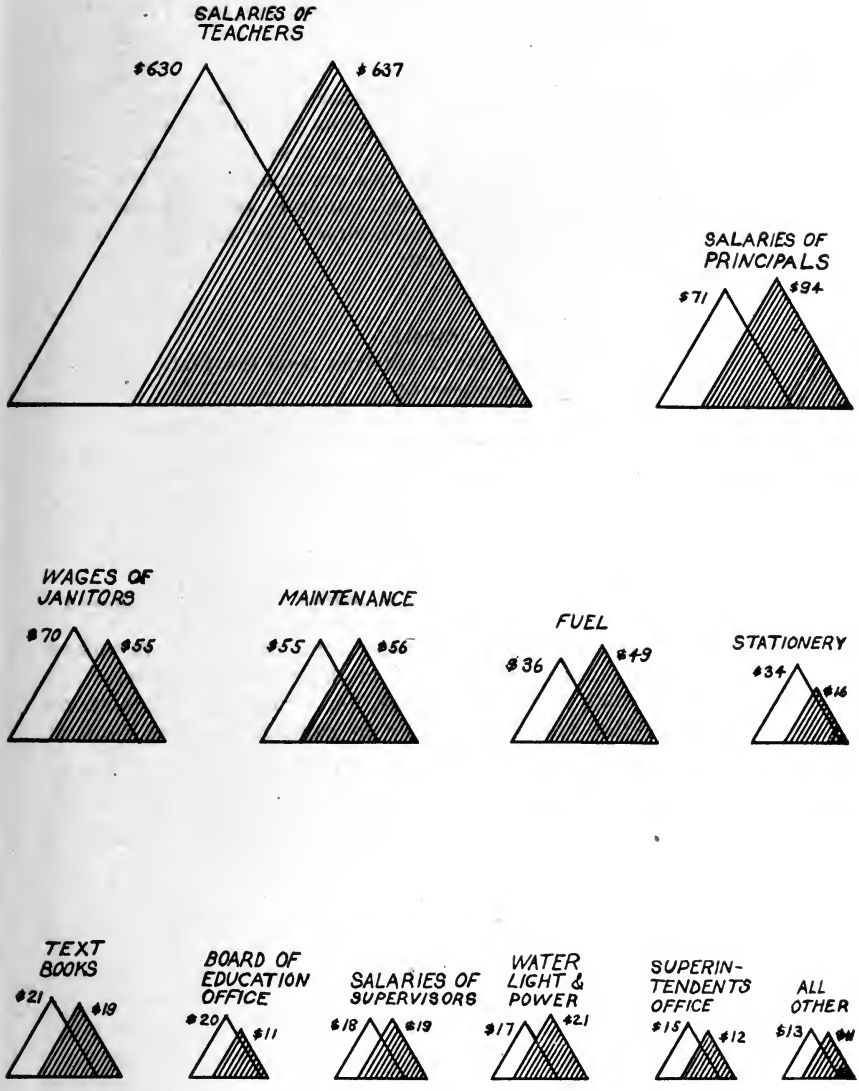

Diagram VI.—Detailed Analysis of Expenditure of Each Thousand Dollars of School Funds in the Average City and in Bridgeport. Triangles in Outline Represent Portion of Each Thousand Dollars Spent For Each Purpose in the Average City; Shaded Triangles Represent Expenditure in Bridgeport.

The Educational Rank of Bridgeport Among the 168 Towns and Cities of Connecticut.

The State Board of Education of Connecticut publishes comparative tables giving the rank of the 168 towns and cities of the State in each of nine educational conditions. The first seven of these nine particulars in which the towns and cities are compared refer to educational resources of population, money, children, and teachers, while the last two refer to educational expenditures. The first seven, which refer to resources are the following:

Population
Valuation of property
Educational funds received from the State
Children enumerated
Average attendance
Children enrolled
Teachers

The last two, which refer to expenditures, are:

School expenditure per child enrolled
School expenditure per child in average attendance.

Diagram VII shows the comparative rank of Bridgeport among the 168 towns and cities with respect to these nine particulars. In the first seven, which refer to resources, her rank is second, third, or fourth. In the last two, which refer to expenditures, her rank is 153d and 154th.

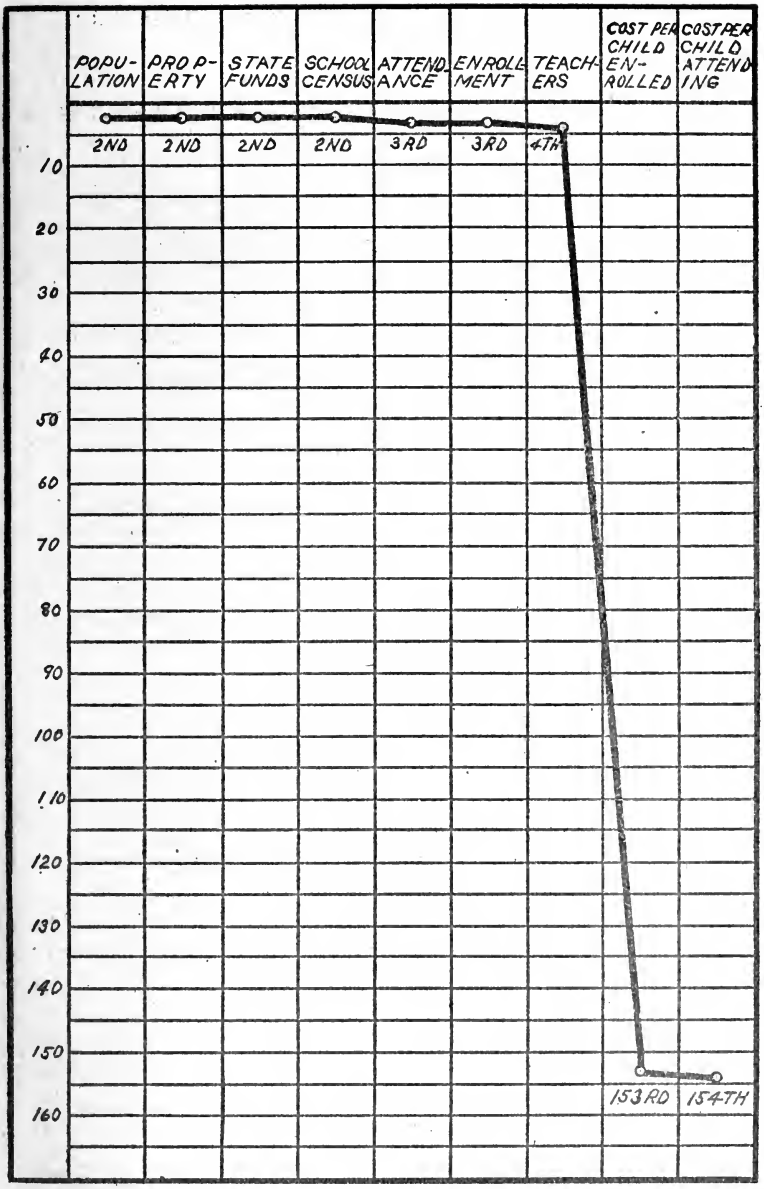

Diagram VII.—Rank of Bridgeport Among the 168 Towns and Cities of Connecticut in Each of Nine Educational Comparisons.

IV. DISTRIBUTION OF PUPILS IN THE SCHOOLS.

Elimination.

"The general tendency of American cities is to carry all of their children through the fifth grade, to take one-half of them to the eighth grade and one in ten through the high school." (Laggards in Our Schools, Ayres, p. 4.) This statement was made in 1909 at the close of the most comprehensive study of retardation that has yet been undertaken. In discussing the condition of the schools of Bridgeport, it is proper to note how closely its results in respect to progress and survival tally with this general tendency.

Bridgeport is an industrial city with an unusually large foreign-born population engaged in industries, most of which utilize unskilled labor. It might be expected then that Bridgeport would fall somewhat below the average standard in the high school and perhaps also in the upper grammar grades, but since the common school course is conceived of as representing the least amount of schooling that should be permitted to anyone, we ought to expect even a city of this markedly industrial type to conform in the lower grades to the general tendency.

The degree of conformity to this general tendency exemplified in the Bridgeport schools will be discussed in connection with statistical tables, the data for which were furnished by the School Department.

We shall first treat year by year the membership of the class that constituted the first grade twelve years ago.

TABLE 1.

Class Membership
Elementary and High School Grades
Bridgeport

Year	Grade	Pupils	Beginners	Per cent of Beginners
1902	I	3241	*1727	100
1903	II	2022		117
1904	III	1827		106
1905	IV	1498		87
1906	V	1127		65
1907	VI	841		49
1908	VII	529		31
1909	VIII	460		27
1910	H. S. 1st yr.	308		18
1911	H. S. 2d yr.	249		14.4
1912	H. S. 3d yr.	182		10.5
1913	H. S. 4th yr.	91		5.3

*For method of estimating the number of beginners, see page 31.

At first glance this table would seem to show that only 460 pupils out of 3241, or 14% of the class of 1902, were carried to the eighth grade, and that less than one-half of the class remained in school after the third grade. But it must be remembered that the number of children in a first grade is never the number of beginners. A first grade is always made up of some children who entered this year, plus some who entered a year ago, plus some who entered two years ago or even earlier.

The records do not show how many children entered school in 1902 as beginners, but their number may be estimated from the number of beginners in 1912-13, which the records do show.

Beginners, 1912-13, Bridgeport:

April, 1912	327
Sept., 1912	1894
Feb., 1913	287
	2508

If, on the basis of the recorded increase in population in ten years (43.7%), we consider 2508 to be 43.7% greater than the number of beginners in 1902, we get 1640 as the number of beginners in 1902. If we proceed on the basis of the increase in total enrollment in ten years (Municipal Register 1912, page 586) or 39.4%, we get 1814 as the number of beginners in 1902. Averaging 1640 and 1814, we get 1727. The number of beginners in Bridgeport in 1902 could not have been far from 1727. Using this as a basal number representing the number of beginners in 1902, we find that only 841 pupils, or 49% of the class, progressed as far as the sixth grade. The striking feature of this record is the congestion in the lower grades and the rapid elimination of pupils as we approach the upper grades. When the class of 1902 reaches the eighth grade, it numbers 460, or only 27% of its original membership, although it has had accessions in grades above the first by reason of the rapidly increasing population. In the first high school year we find 308 pupils, most of whom, probably, were in the original class of 1902, but some of whom were later accessions. Their number is 18% of the original class. The fourth year high school class has retained 5.3% of the membership with which the original class started.

Retardation.

Pupils who have taken more than one-half year to reach grade I^2, more than one year to reach grade II^1 and more than one and one-half years to reach grade II^2 are retarded. No school system is free from retardation. The amount of retardation in Bridgeport must, however, be pronounced excessive. To illustrate: According to the Progress and Age Study blanks returned under the direction of the School Department for September of the present scholastic year, grades I^2, II^1 and II^2 were made up of children who had attended school as follows:

Grades	I[2]	II[1]	II[2]
½ year	46	3	3
1 year	303	181	19
1½ years	344	286	53
2 years	207	385	226
2½ years	98	236	145
3 years	44	179	238
3½ years	22	53	79
4 years	15	61	100
More than 4 years	16	74	81
	1095	1448	944

Retardation by Age and Grade.

The amount of retardation in all the elementary grades is shown in another way by the "age and grade" standard in the following table compiled from data furnished by the School Department. The standard commonly agreed upon rates as above normal age all children in the first grade who are eight years of age or older, those in the second grade who are nine years of age or older, and so on for each succeeding grade.

TABLE 2.

Bridgeport

Distribution of Pupils by Ages and Grades, September, 1912.

Ages	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	Totals
Under 5 yrs. ..	15	1							16
5 years	1100	1							1101
6 years	1376	182	6	1					1565
7 years	765	661	100	3					1529
8 years	369	722	374	87	7	1			1560
9 years	146	488	539	270	43	9	4		1499
10 years	57	218	484	454	179	46	10	3	1451
11 years	28	99	311	434	315	140	33	10	1370
12 years	24	64	195	408	366	244	128	53	1482
13 years	18	35	105	258	326	306	257	94	1399
14 years	8	16	38	87	126	151	164	132	722
15 years	5	1	20	18	36	51	93	74	298
16 years				1	6	8	22	31	68
17 years				1	1	2	2	6	12
18 years								1	1
Totals	3911	2488	2172	2022	1405	958	713	404	14073
Above normal age	655	921	1153	1207	861	518	281	112	5708
Per cent. above normal age	16½	37	53	59½	61	54	39	27	40

Table 2 shows the ages of pupils at the beginning of the school year. Figures taken in September will show a lower percentage of retardation than will similar data gathered later in the school year. These numbers and percentages, therefore, are as favorable as any that the school records could yield.

All below the broken line in the table are above normal age for the grades they are in. The number of over-age pupils in each grade is shown in a line below the table and in the next line these numbers are reduced to a percentage basis. Out of a total of 14,073 pupils, 5707, or 40%, of the whole number are above the normal age for their grades.

It will be noted that there is a decided falling off in attendance after the fourth grade. In fact, the greatest loss occurs at this point. The fourth grade loses 617 pupils, while the fifth loses 447, the sixth 245 and the seventh 309. (The discrepancy between the number of children in first and second grade has been explained in connection with Table 1.)

Since the fifth grade is 30% smaller than the fourth, it is evident that in Bridgeport the general tendency is not to carry all the children through the fifth grade, but only through the fourth grade. The records of the State Agent's office show that children begin to drop out of school in the third grade. From September, 1911 to December, 1912, working certificates were given to 49 children in the third grade, 192 in fourth grade, and 564 in the fifth grade.

In Ayres' study of retardation in 31 cities, 24 cities of the 31 show a lower proportion of their pupils above normal age for their grades than Bridgeport. Bridgeport's rank, if included in this table, would be 25. (Ayres, Laggards in Our Schools, p. 45).

For purposes of comparison, the distribution of pupils by ages in the eight grades of the Grand Rapids, Michigan, schools, as found in the annual report for 1911, is here given. The two separate tables, one representing boys and the other girls, have here been combined in one table. Grand Rapids has been chosen for comparison because it is an industrial city of composite population, not much larger than Bridgeport,—not because of any noteworthy record of pupil progress. In fact, its rank in this respect in the Ayres table of 31 cities would be 22, only three points above Bridgeport; but its pupils are better distributed through the grades.

TABLE 3.

Grand Rapids, Michigan.

Distribution of Pupils by Ages and Grades, September, 1910.

Ages	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	Totals
5 years	43	1							44
6 years	813	45	1						859
7 years	800	616	57	2					1475
8 years	274	685	440	52					1451
9 years	50	312	656	272	36	3			1329
10 years	20	108	334	570	314	26	1		1373
11 years	11	21	134	361	452	175	35	1	1190
12 years	3	5	50	184	364	345	183	39	1173
13 years		5	18	72	170	336	360	224	1185
14 years		1	5	29	116	236	329	280	996
15 years		1	3	13	38	107	189	295	646
16 years			1	2	11	36	61	123	234
17 years						3	3	24	30
18 years								6	6
Totals	2014	1800	1699	1557	1501	1267	1161	992	11991
Above normal age	358	453	545	661	669	718	582	448	4464
Per cent. above normal age	17.7	30	32	42	46	57	50	45	37

Comparing the percentages representing the children who are over-age for their grades in the two cities, we have the following:

Grade	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	Totals
Bridgeport	16.5	37	53	59.5	61	54	39	27	40
Grand Rapids ...	17.7	30	32	42	46	57	50	45	37

The fact that strikes one's attention here is the higher percentage of over-age children in Bridgeport through the fifth grade and the higher percentage in Grand Rapids after the fifth grade.

The explanation is obvious. There are more repeaters in Bridgeport than in Grand Rapids, and there is also greater elimination. The over-age pupils have dropped out of school.

Grand Rapids has carried pupils to the eighth grade, 45% of whom are above the standard age for the grade, and this is creditable. In Grand Rapids 28.5% of all pupils enrolled in the elementary schools are in grades VI, VII and VIII; in Bridgeport 14.7%. In Grand Rapids 31.6% of all pupils in grades I to V are retarded; in Bridgeport, 40%.

Over-age pupils are found in all grades in all school systems. We judge the standing of a school system in the matter of progress and survival (1) by the proportion of its pupils who are not over-age in the grades in which the compulsory attendance laws are operative, and (2) by the proportion of its pupils that it holds in school

after the law allows them to leave. Thus measured, the standing of Grand Rapids is by no means high, but that of Bridgeport must be pronounced decidedly low. To meet the moderate standard set by Grand Rapids, Bridgeport should have 4011 pupils in grades VI to VIII (28.5% of 14,073), whereas we find only 2075, too few by 1936. By the Grand Rapids standard, Bridgeport should have only 3791 over-age pupils in grades I to V (31.6% of 11,998), whereas it has 4797, too many by 1006.

Analysis of Fifth Grade Enrollment.

The "age and grade" table for judging retardation needs to be supplemented by one showing the time in school as well as age and grade, for in Tables 2 and 3 children who enter late and have made regular progress appear as retarded along with those who have been held back to repeat one or more grades. The fifth grade has been selected for analysis. It is in this grade that retardation culminates at 61%. Two tables are shown. One table represents the pupils in grade V^1, the other those in grade V^2.

Age and Time in School, Grade V^1, Bridgeport, September, 1912.

Years in Sch'l	AGES. 5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total
½															
1															
1½									1						1
2															
2½															
3				2	3	6	2	1		1					15
3½					2	3	5								10
4					20	27	17	5							69
4½					8	28	28	10		1	1				76
5					1	68	56	40	12	1					178
5½					1	22	33	22	9	1					88
6						2	65	57	27	3					154
6½							25	41	16	4	1				87
7							7	53	37	15	3				115
7½								14	22	7	2				45
8								1	28	13	5				47
8½									3	7					10
9									3	10	4				17
9½															
10									1		2				3
10½															
11															
Total				2	35	156	238	244	159	63	18				915

This table shows that in September there were 915 children in the V^1 grade in Bridgeport. By referring to the top row of figures, it will be seen that these children varied in age from 8 to 15 years, and reference to the first column shows that they had been in school from 1½ to 10 years. According to the commonly accepted standard, the age of 11 years is the normal age for children of the fifth grade; and thus, by drawing through the table two heavy vertical lines, we divide the figures into three groups, leaving on the left all the children below normal age, and on the right those above normal age. When the figures of the three groups are added, we have the following results:

Below normal age,	193
Normal age,	238
Above normal age,	484

In a similar way, divisions into progress groups are made by drawing two heavy horizontal lines between which should be included children who have been in school four years and have just begun the fifth grade, thus making normal progress. But to err on the side of over fairness, we assume 4½ years in school to be normal for beginning the V^1 grade and 5 years for beginning the V^2 grade, thus allowing ½ year for good measure. Those remaining above the lines have made rapid progress, while those below have made slow progress. Adding the figures for these groups we have the following:

Rapid progress,	95
Normal progress,	76
Slow progress,	744

We have noted that 484 pupils are over-age and that 744 have made slow progress. but we see that the terms "slow" and "over-age" will not invariably refer to the same pupils. Some of the over-age pupils are not slow and some slow pupils are not over-age. We find 94 pupils who are young but slow, and 8 who are over-age but rapid, and other combinations between. If we add the figures in each division we have a new table in which the 915 children are distributed by age and progress groups as follows:

	Young	Normal	Over-age	Total
Rapid	63	24	8	95
Normal	36	28	12	76
Slow	94	186	464	744
Total	193	238	484	915

Age and Time in School, Grade V², Bridgeport. September, 1912.

AGES.

Years in Sch'l	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total
½															
1															
1½															
2															
2½															
3								2							2
3½							3								3
4						3	3	1							7
4½					2	4	2	3	1	1					13
5					1	18	34	15	1						69
5½						13	21	22	16	1					73
6						3	32	34	23	3					95
6½							10	27	30	2	1				70
7								18	28	7	1				54
7½								17	20	6	3	1			47
8								4	16	8	1				29
8½									6	7					13
9										9					9
9½										1	2				3
10											1	1			2
10½															
11															
11½															
12												1			1
Total					3	41	105	143	141	45	9	3			490

Treating this table as we treated the table for grade V¹, we have the following:

	Young	Normal	Over-age	Total
Rapid	9	28	8	25
Normal	19	34	16	69
Slow	16	63	317	396
Total	44	105	341	490

Combining the figures for grades V¹ and V² we have the following:

Age and Progress Groups, Fifth Grade.

	Young	Normal	Over-age	Total
Rapid	72	32	16	120
Normal	55	62	28	145
Slow	110	249	781	1140
Total	237	343	825	1405

Reducing the numbers in the above table to a percentage basis, we have the following:

	Per cent Young	Per cent Normal	Per cent Over-age	Total
Per cent. rapid	5	2	1	8
Per cent. normal	4	4	2	10
Per cent. slow	8	18	56	82
Total	17	24	59	100

This is not a good showing. It cannot be expected, of course, that all children in a grade will make normal progress, but there should be a closer correspondence between the number who are young and have made rapid progress and the number who are over-age and have made slow progress, the two extremes in the table. These numbers are 72 and 781. The ratio is 1 to 11.

Comparison with 31 Other Cities.

Some of the causes contributing to this condition will be pointed out later. At this point it is desirable to show by comparison that the percentages yielded by the Bridgeport table are unusual. Many more children are leaving school in Bridgeport without receiving a tolerable minimum of education than in 29 cities studied by the Division of Education of the Russell Sage Foundation in 1911. The following table shows the result of that study in percentages as published in the American School Board Journal for December, 1911.

School Children by Young, Normal, and Old, and by Rapid, Normal, and Slow Groups.

Average Conditions for 29 Cities.

	Per cent Young	Per cent Normal	Per cent Over-age	Total
Per cent. rapid	6	3	2	11
Per cent. normal	21	21	10	52
Per cent. slow	2	10	25	37
Total	29	34	37	100

It will be noted that in these 29 cities the percentage representing the children who are young and have made rapid progress is related to that representing those who are old for the grade and have made slow progress as 1 to 4, while in the Bridgeport table the ratio is 1 to 11. In the table for the 29 cities, it will be noted further that there is better balance between the percentages whether we compare them horizontally or vertically. For instance, the percentage of those old for the grade (37) is nearly balanced by the percentage of those who are young for the grade (29). In the Bridgeport table the corresponding numbers are 59 and 17.

It is clear that according to generally accepted standards too few children in the elementary grades of Bridgeport are making rapid or even normal progress, and that far too many are making such slow progress that they arrive at the age when they may legally receive the working certificate before they have reached the fifth grade.

Causes of Excessive Retardation.

Some of the causes of this unfavorable condition are obvious:

(1) The schoolrooms are overcrowded. According to the monthly report for February, 50 or more pupils are in attendance in each of 33 rooms, and from 45 to 49 in each of 150 rooms. No teacher can do justice to her pupils under such conditions. The maximum number of pupils per teacher should be 42. The best work cannot be done when the number in the class exceeds 35. Thirty-two additional classrooms would be needed to reduce the present attendance to 42 pupils per room, not counting rooms needed for special classes and industrial work.

(2) There are no special classes for foreign born children, whose chief need at first is to learn the English language.

(3) There are no special classes for retarded children, and only one for the feeble-minded. Scattered through the lower grades, a few in each room, they learn little and they impede the progress of normal children.

(4) Though the state law permits school boards to fix a school grade which the pupils must pass before they can receive the working certificate, no such action has been taken in Bridgeport. During the fifteen months ending last December, 1356 children in grades II to VI, all of the retarded class and over fourteen years of age, left school to go to work.

(5) The course of study in arithmetic makes heavier demands upon the pupils in the first three grades than is now customary in most school systems. Doing so much in arithmetic in the lower grades is not essential to securing the high rank in fundamentals which Bridgeport has attained in the upper grades.

(6) The phonetic method by which all beginners are taught to read fails to appeal to the natural interests of children and makes too great a demand upon their feeble power to deal with abstractions. Children make much more rapid progress in learning to read, and attain no less independence in reading, by methods which involve less sheer drudgery. This method as used makes learning to read so difficult that only the very brightest children can meet the first grade requirement in a year.

(7) The requirement in formal grammar in all grades below the seventh is too heavy. Such definitions and grammatical forms as are called for in grades I to V, inclusive, have little or no value as

training in the use of language in speaking and writing. Grade VI is the first in which formal grammar should begin, and it would be better to defer it till the seventh grade is reached.

(8) It is questionable whether examinations should play so important a part in the promotion of pupils as they appear to do in Bridgeport. When examinations are used primarily as teaching exercises, and secondarily as a check upon varying judgments of teachers, they need not be retarding influences. Perhaps all principals in Bridgeport so use them, but unless the official circulars are interpreted more liberally than their language warrants, the examination system in use must be responsible for a large share of the retardation which is so conspicuous in the schools.

V. PROPOSED CHANGES IN ORGANIZATION.

In the seventh and eighth grades the enrollment is relatively small. We find in them only 1117 pupils out of a total of 14073 (see table 2, p. 32). In several schools the classes in these grades are so small that for the sake of economy they must occupy the same room. Results under such an arrangement must be unsatisfactory.

Recommendations.

Reorganize the elementary grades so that grades I-VI shall constitute a unit and grades VII-VIII a unit. In the two-year unit formed by grades VII-VIII, provide for differentiation of work in accordance with the needs of different groups of pupils and particularly in the interest of pupils destined to leave school at the end of the eighth grade.

Through grades VII and VIII offer four distinct lines of instruction: (1) academic; (2) commercial; (3) industrial; (4) domestic. And in the academic course provide foreign language study (Latin and German or French), this particularly for pupils destined to go to college.

Have the seventh and eighth grade instruction conducted on a carefully arranged departmental plan, collecting all the seventh and eighth grade classes into certain buildings conveniently located about the city; but in any one such center not all four of the differentiated courses need be offered, consideration being given to the character of the neighborhood in selecting the courses to be offered.

Transfer seventh and eighth grade classes from the Clinton Avenue School to the building now used as the High School, thus giving added facilities to the City Normal School in the Clinton Avenue building. Transfer other seventh and eighth grade classes now in the smaller outlying schools to the old high school building to the limit of accommodations. Distance should not be an objection, since the proposal anticipates the inevitable transfer by only two years and offers opportunities greatly superior to any that can be provided in scattered outlying schools.

Reorganize the four high school grades so that there shall be certain coherently planned two-year courses alongside the four-year courses. For several specific recommendations along this line, see the section on the Program of Studies.

Grammar Grade Differentiation.

Not only educational principles, but also certain obvious facts suggest that in the upper grades there should be differentiation of instruction to meet the varying needs of different groups of children. The traditional uniform academic course (with perhaps some little time given to manual training or domestic science) which still prevails in many cities is an arrangement good enough for pupils who are to have a long period of schooling; but much more profitable courses can be offered for pupils whom economic impulse will force into productive work at a comparatively early age. The latter class of pupils are now leaving school at various points from the fourth or fifth grade on, and often just as soon as they reach the legal limit of compulsory schooling. They quit school because of the attraction of wages, it is true, but chiefly because they have natural inclinations that lead away from the bookish interests of pupils destined ultimately to enter the professions; and such unliterary pupils would remain in school longer and receive more adequate training for good citizenship and efficient social service, if the school offered, alongside the academic work, parallel courses of industrial, commercial, and domestic instruction. Into the latter lines of activity many pupils will eventually go, and they will prove much more reliable and contented employees if they have received instruction enlightening them in the importance and dignity of callings other than the so-called professions, and if they have been given an introductory training preparing them for the rapid acquisition of skill when they enter particular lines of business or definite trades.

The foregoing considerations lead to the recommendation for a differentiation of school work at the beginning of the seventh grade. Boys and girls certain to go into the high school (and in a number of cases even to college) would continue to pursue through the seventh and eighth grades the present academic studies with the added privilege, entirely optional, however, of beginning a foreign language at the age, twelve to fourteen years, when the drill incident to language acquisition is most acceptably undertaken. Pupils, on the other hand, destined to begin work toward self-support at an early age, either in business or in the industrial field, would find in the proposed seventh and eighth grade industrial courses just the sort of instruction and training most interesting to them and most profitable for the future life work to which they are to devote themselves. Moreover, the industrial instruction and practice here proposed can be developed along either or both of two lines: (1) the prevocational course to awaken interest in industrial pursuits and disclose the natural bent of the pupil; (2) specific trade training courses for those in whose cases decision has been made for this or that leading trade of the community. And finally, the proposed domestic course for seventh and eighth grade classes will afford to many girls the only opportunity they will ever have for systematic instruction toward becoming in the future the efficient home-makers that every community so sorely needs.

Departmental Instruction.

Differentiation of instruction in the upper grades naturally suggests departmental teaching, because no single teacher can be expected to teach the whole range of subjects included in the group of parallel differentiated courses. Departmental teaching is the plan common in high schools, where several teachers co-operate in the instruction of a group of classes by having the classes pass from teacher to teacher, receiving from each teacher instruction in only a single subject or in but two or three related subjects. This plan of teaching is to be recommended for grammar grade classes, at any rate for the seventh and eighth grades, whether or not differentiated courses are offered. It is true that departmental teaching in the elementary school has dangers (for example, the overworking of pupils), that must be guarded against; but any competent principal with intelligent assistants frequently conferring together can avoid the possible disadvantages of departmental instruction and secure all the real advantages of the plan.

Of these advantages (frequently set forth in educational literature) the following may be here enumerated: better teaching; better equipment; enriched curriculum; promotion by subject; improved physical conditions for pupils; interest and stimulus of several teachers instead of one only; college graduates in grammar grade positions; transition to high school attitude and methods.

No argument is needed to establish the fact that a teacher can become more expert in her teaching when she has to prepare upon only one subject or a few related subjects, and these subjects also in the line of her special interests, than when she must prepare upon the whole round of subjects now taught in the seventh and eighth grades of any progressive school system. Similarly, it is a great advantage to the pupil to be taken on from grade to grade in a given subject by the same teacher, an expert in the particular subject. Again, no argument is needed to show that a given outlay to purchase equipment for, say, geography instruction, will go much farther when applied in the fitting up of a single room, the geography teacher's room, than when divided up among several rooms to give each of several teachers a share of the equipment for her geography lessons. Better teaching and better equipment inevitably bring about an enriched curriculum; for each of the teachers, in learning more and more about her chosen subject and in accumulating more and more equipment, will step by step develop the more important phases of her work and give less attention to or even discard entirely the less important phases; and, moreover, every study in the course, being in the hands of a sort of specialist, will receive its due share of time and attention, and will be taught so as to stir interest and produce truly educative effects. On the other hand, when a pupil has difficulty with any subject, the departmental plan, in affording a medium for promotion by subject, makes it an easy matter to advance this pupil in everything he has been successful with, while at the

same time holding him back for review upon the subject only in which he has failed. Pupils also enjoy improved physical conditions under the departmental plan in getting the relief, activity, and variety afforded by moving from room to room as the periods of the day roll by. And many a pupil who finds school irksome and monotonous, or even repellent under the one-teacher plan (especially with a teacher not in Group A of the superintendent's efficiency roll), will develop a new interest and pleasure in his work under the stimulus of several teachers co-operating in departmental organization.

It is just the departmental organization, moreover, that will bring into the grammar grades scholarly and enthusiastic college graduates, for college graduates entering the school service have quite as lively an interest in seventh and eighth grade children as in high school pupils; but the task of teaching the whole work of a grade, including subjects quite outside the teacher's special interests, is not attractive to one who has gone to college for the express purpose of getting superior knowledge and training in the two or three selected subjects that the candidate wants to teach.

Finally, and as a consequence of all the foregoing, departmental instruction in grammar grades is an admirable device for mediating the transition from the elementary school to the high school, because under this plan pupils are introduced gradually to high school methods and assume quite easily the high school attitude; and although this consideration may be said to apply only to the pupils who go on to the high schools, it is nevertheless an important factor both in determining how many will thus prolong their schooling beyond the eighth grade and also in unifying the whole school system of a city.

Bridgeport, it is believed, would experience every one of these educationally beneficial effects from the introduction and judicious management of departmental teaching in the seventh and eighth grades.

VI. THE CITY NORMAL SCHOOL.

The city training school for teachers is in Public School building No. 3, located on Clinton Avenue, near State Street. The building was erected in 1890. In this building and in a portable building in the rear yard is an elementary school of fifteen classes of all grades through the eighth year.

The normal department has forty-nine students, twenty-one seniors and twenty-eight juniors. The students who are not teaching in the elementary school, recite and study in one room. In this room are the text-books, reference books, library books, and practically all of the apparatus and illustrative material used in the normal department.

Teaching Force.

The teaching force consists of a principal and five critics or supervisors.

The principal is a graduate of the Bridgewater, Mass., State Normal School, has studied one year at Radcliffe College, and has taken extension courses at Clark University, Yale University, and Columbia University. She was a teacher and principal in various schools in Massachusetts and Connecticut for fourteen years; assistant superintendent in Worcester, Mass., three years, and has been principal of the Bridgeport City Normal School for fourteen years.

One of the critics is a college graduate. This one and three others are graduates of the Bridgeport High School and had taught for a number of years in Bridgeport before appointment to the Normal School faculty.

The other critic is a graduate of the Lowrie Kindergarten Training Institute, Jersey City, and of the New Paltz (N. Y.) Normal School. She taught in schools in New York and New Jersey, eleven years, and has been critic in the Bridgeport Normal School four and one-half years.

All have broadened their experience by taking extension work or attending one or more University Summer sessions.

The assignment of work to the teaching force is as follows: The principal supervises the work of the entire building, attends to all of its administrative features, and teaches school management and principles of education in the theory department, three periods per week in the first term, four periods the second term, and three periods the third term.

The critic teachers, "supervisors," both give the theory and direct the practice. Also each critic (except one) has two or three rooms in charge with four or six students at practice. Here there is too much to be done; the conditions render adequate supervision of each student's practice simply impossible, on the other hand it is impossible to conduct the theory instruction in the best way. Consequently the pupils in the classrooms are not being properly cared for, and the normal students are not receiving as high grade training as the city should provide. There should be a liberal addition to the teaching force if the normal faculty are to be responsible both for normal instruction and for the progress of the children in so many classes; or the building should be allowed additional regular teachers for some of the rooms which need not thereby cease to be practice rooms for part of each day. With such heavy assignments to the normal instructors and with no study rooms and no library, the teaching is largely by teachers' lectures based on outline notes. Hence much of the students' theory work cannot amount to more than note-taking practically at dictation and cramming the contents of the note books.

The special supervisors of music, drawing, writing. and physical training in the city schools instruct the normal students one period per week.

Entrance Requirements.

Candidates for entrance to the City Normal School must be residents of Bridgeport and must be graduates of the Bridgeport High School, or must have completed a course of study considered equivalent, or must pass a satisfactory examination.

Graduates of the Bridgeport High School are accepted from either the English or College Preparatory Course. The courses differ considerably. The English Course provides a review of grammar, geography and arithmetic, two periods per week for one semester of the senior year for those planning to attend the City Normal School. A definite standard of scholarship in these elementary school subjects is not insisted upon if students have points to their credit in other high school subjects.

Several students have been graduated from the high school and thereby admitted to the City Normal School, although they did not do satisfactory work in their review of the elementary school subjects in high school. The College Preparatory course does not offer a review of the elementary school subjects. Of those at present in attendance at the City Normal School, two juniors and four seniors are graduates of the College Preparatory Course.

Every candidate must present evidence of good health, and must possess good moral character. The physical examination is not definitely outlined. No city medical examiner is employed. The family physician, or any physician, gives such an examination as he sees fit, in order to be able to sign the following certificate:

"I have this day given Miss ———————— a medical examination and find her in good health with no tendencies toward weakness or disease that should interfere with her pursuit of the Course of Study and Practice in the City Normal School for teachers or of the vocation of teaching.

"———————————— M. D."

No further physical examination is given before appointment to the teaching force.

There is no prescribed limit to the number of candidates admitted.

Course of Study.

Juniors—

1st Term—14 weeks—Theory		all day
2nd Term—14 weeks—Theory		A. M.
14 weeks—Practice		P. M.
3rd Term— 9 weeks—Theory		all day

Seniors—

1st Term—14 weeks—Practice		all day
2nd Term—14 weeks—Practice		A. M.
14 weeks—Theory		P. M.
3rd Term— 9 weeks—Practice		all day

Division of Theory Work.

Junior Year			Forty minute periods	Hour periods
1st Term	Principles of Education,	Equivalent	55	38
	Methods of Recitation,	"	40	27
	School Mechanics,	"	20	13
14 wks.	Phonics,	"	70	47
"	Nature Study,	"	50	33
	Arithmetic,	"	70	47
	Geography,	"	70	47
	Music,	"	20	13
	Drawing,	"	20	13
	Writing,	"	20	13
	Physical Training,	"	20	13
			455	304
	(A. M.)			
2nd Term	Principles of Education,	"	35	23
	Methods of Recitation,	"	20	13
	Psychology,	"	20	13
14 wks.	Reading,	"	40	27
"	Arithmetic,	"	20	13
	English,	"	40	27
	Music,	"	20	13
	Drawing,	"	20	13
	Writing,	"	20	13
	Physical Training,	"	20	13
			255	168

Senior Year—			Forty minute periods	Hour periods
3rd Term	General Methods,	Equivalent	35	23
9 wks.	Psychology,	"	50	33
"	Manual Training,	"	50	33
	English,	"	50	33
	Geography,	"	50	33
	Music,	"	12	8
	Drawing,	"	12	8
	Writing,	"	12	8
	Physical Training,	"	12	8
			283	187
2nd Term (P. M.)	School Management		55	37
14 wks.	History of Education		45	30
	History		45	30
	Music		10	7
	Drawing		10	7
	Writing		10	7
	Physical Training		10	7
			185	125

For the Course.

English, including phonics, reading, oral and written composition	200	133
Geography	120	80
Arithmetic	90	60
Principles of Teaching	90	60
General Method	95	63
History of Education	45	30
Psychology	70	47
Nature Study	50	33
Music	62	51
Drawing	62	51
Writing	62	51
Physical Training	62	51

The text-books with which each student is provided, are:

McMurry's General Method
McMurry's Method of Recitation
Tichener's Psychology
James' Psychology
Monroe's History of Education
Kemp's History of Education
Mace's History Methods
Tarr and McMurry's Geography

The Junior Program for the first term of the present school year:

	Mon.	Tues.	Wed.	Thurs.	Fri.
9:00— 9:15	Nat. Study	Morning exercises.			
9:15— 9:55	Nat. Study	Geo.	Nat. Study	Geog.	Nat. Study
10:00—10:55	Education	Drawing	Education	Math. Rec.	Education
11:00—11:55	Music	Nat. Study	Writing	Nat. Study	Phy. Ed.
1:30— 2:25	Geog.	Arith.	Arith.	Arith.	Arith.
2:30— 3:25	Math. Rec.	Phonics	Phonics	Phonics	Phonics

The program is changed each month to enable the critics and supervisors to supervise at different hours of the day and the subjects in the grade classes.

Observation.

The opportunities afforded the students to observe model work are very limited. During the junior year the students have occasional opportunities to observe groups of children in the normal room taught by a critic, classes in the elementary school taught by a critic or senior, and groups or classes taught by a junior.

During the senior year, they may observe occasionally classes taught by a critic or special teacher, or of a senior in charge.

Practice Teaching.

Twelve of the fifteen elementary school classes in the building, grades I to V, are taught by students of the City Normal School. The highest grades in the building are entirely apart from the Normal Department, the students having nothing to do with these classes, either in observation or practice. The seniors teach all day during the first and third terms. During the second term the seniors teach in the morning, and the juniors in the afternoon.

The critics supervise the work as before indicated, and teach a lesson occasionally.

As a preparation for teaching, the juniors are given some preliminary instruction during the first week of the second term. For three days they are instructed in groups by the critic teachers in the mechanics of the class work and schoolroom management, they are given lessons on the principles of education peculiarly applicable to classroom instruction, and they are allowed to observe the work of seniors and critics in teaching the classes to which they have been assigned.

The daily programs and weekly outlines are carefully examined in advance by the critics. If there are two pupil teachers assigned to one room, each teaches her own group in reading, arithmetic, and geography, and alternates with the other pupil teacher in teaching the whole class in the other subjects.

Throughout the day, as time permits, the principal and critics observe the work of pupil teachers, take notes, suggest and criticise.

At the close of the day, each Monday, the principal meets the critics for suggestion and reports, and on Tuesday each critic meets the pupil-teachers assigned to her and offers general suggestions, criticisms, and plans of work. One hour each week, usually Friday at 3:30 P. M., is reserved for individual criticism.

The pupil-teachers have teaching experience during the course in three grades and under three critics—the first assignment as juniors, the second as seniors from September till April, and third for the balance of the school year.

For this teaching service the seniors receive $2000 appropriated by the city,—from $75 to $100 each. The seniors are called upon to do considerable substitute service in the occasional absence of regular teachers. The seniors detailed to such service are those that can best be spared from class instruction in the school.

In order to retain their membership and be graduated, the students have been required to maintain an average of 70%, but during the last year the passing mark has been raised to 80%. This raising of the standard has tended to eliminate several from the school. Of the class of 1913,—the class that entered in September, 1911,—nine have already dropped out by the advice of the teachers or because of actual failure to do satisfactory work.

The graduates of the City Normal School are appointed to positions in the city schools in the order of their standing at the close of their course. In this way all graduates have been able to secure positions in the Bridgeport schools within a year after graduation.

Until within two or three years, the City Normal School supplied nearly all the teachers needed in the elementary schools, but during the past two or three years, from five to ten teachers have been secured from outside the city limits.

Comments.

Visits to the school, conferences with the principal and critics, observation of the work by teachers and students, lead one to value highly the spirit and efforts of all. The principal and critics have full notes and outlines of each subject. Some of the books used as authority on special topics, however, are by no means up to date.

The work is well organized and is carried out as well as could be expected under existing conditions. The students are mature, interested, alert, striving hard to make the most of their opportunities.

Owing, in a measure, to the lack of proper school accommodations, the instruction is to a very considerable extent embodied in the dictation of notes, outlines, and definitions. There is lacking such a course in English as the pupil-teachers need for their professional

equipment. The students of each class recite in a single division practically all day. There is little opportunity for research and study at the school building.

The Normal School has no responsibility for its graduates even during the first few critical months of their experience as teachers. During this time they need expert help, either from the Normal School or from the office of supervision.

Defects.

1. **The building as now used** is wholly unsuited to the purposes of a training school for teachers. It was built more than twenty years ago. Classes of the elementary grades occupy all of the rooms except the one reserved for the use of the normal students. The ground floor hallway is dark; the top floor is a large assembly hall, but little used. The building has:

(a) **No room for a kindergarten.** There is a serious omission. The kindergarten is now an integral part of our public school system, and city training schools should afford an opportunity to study at first-hand a well-managed kindergarten. Through it the teachers, especially those placed in charge of the lower grades, may become thoroughly imbued with the spirit of the kindergarten.

(b) **No room for classes of drawing.** Drawing can be taught to advantage only when a suitable room and equipment are provided. The present class room is unsuited to the purpose as regards tables, desks, seats, and light.

(c) **No room for the library and study.** The text and reference books, some 1400, are in cases under the windows where it is difficult to read the titles, to make a selection, and to use them to advantage. A larger and more modern collection of reference books is very much needed, and a room should be set aside, furnished with chairs, tables, and bookcases, where the books can be consulted readily.

(d) **No science room.** In this room there should be a modern equipment for the proper teaching of elementary science, nature study, and geography,—tables, movable chairs, demonstration tables with gas, electricity, and running water; maps, charts, globes, lantern and slides, display and storage cabinets, aquaria, and various collections for illustrative purposes.

(e) **No manual training room.** In this room there should be accommodations for instruction in raffia, cardboard, elementary woodwork, and sewing. And for the boys and girls in higher elementary grades, accommodations should be provided for instruction in shop work and cooking.

(f) **No gymnasium.** Physical training has assumed a large place of late in a well-organized system of schools. The instruction in this line in the Bridgeport Normal School, from necessity, is mostly dictation and note-taking. It should be largely practical demonstra-

tions in a gymnasium. In this work most clearly we learn to do by doing; we can teach well only when we can demonstrate the movements and exercises in a satisfactory manner. This training would develop in the students, in a marked way, grace and strength, and should improve their health very perceptibly.

(g) **No playroom.** Ample accommodations should be provided for play activities. Such a room could be used by the pupils of the practice school, and by the students of the Normal School in learning to direct organized play.

2. **There is little opportunity for the observation of model work.** Teachers in training should have an opportunity to observe the regular grade work of superior teachers. Observation of teaching exercises conducted by other students, or specially prepared lessons with groups of children conducted by one of the critics, do not sufficiently serve the purpose. A model school connected with a normal school should afford the coming teachers an opportunity to observe first-class work carried on connectedly day by day,—work that brings results and is worthy of emulation.

3. **There is no opportunity to observe the management and activities of a special class for exceptional children**—retarded, mental defectives, voice defectives, crippled or anemic. At least one or two of these classes should be in the training school building or in some nearby building, so that the coming teachers may be led into a sympathetic acquaintance with exceptional cases and the best methods to pursue in their education and training.

4. **The practice teaching can be better organized.** By the present plan the juniors are placed in charge of elementary classes, under the supervision of critics, for the afternoons of the second term. This assignment is made before the students are at all well prepared for teaching. And the teaching experience in the school cannot afford an adequate test of the pupil-teacher's ability to teach or to discipline.

5. **A very limited supply of apparatus and illustrative material is provided.** In a training school for teachers there should be a complete equipment of illustrative material in order that coming teachers may know and appreciate what helps are available in a well-organized school.

One reason for the scarcity of these helps is no doubt the limited storage conveniences and the lack of a room for their display and use.

6. **The entrance requirements are too easy.** Mere graduation from a high school is not sufficient. There should be a thorough written examination on the principal subjects of the high school course and on the departmental subjects of the elementary school course. A high standard of scholarship should be insisted upon as a prerequisite of entrance, even if an examination eliminates one-

third or more of the candidates. Such an examination would react upon the high school and lead to more accurate scholarship in that school.

And a thorough physical examination of each candidate should be made by a city physician employed for the purpose. The heart, lungs, blood, urine, hearing, and sight, should receive close attention by a competent medical expert.

Recommendations.

1. Provide suitable accommodations for a city training school for teachers, either by making the necessary changes in the present building on Clinton Avenue and providing for it a proper equipment, or by devoting to this purpose one of the new buildings soon to be erected.

In case it is deemed best for the training school for teachers to remain where it is,

Vacate four rooms on the third floor and transfer the higher grade pupils of the elementary school to neighboring schools; equip the rooms thus vacated, one as a gymnasium, one as a library, one as a science room for classes in nature study, elementary science, and geography, and one as a room for classes in drawing. Use the remaining rooms in the building for classes of pupils in grades below the sixth year. Use the portable building in the rear for a kindergarten class.

2. Make the present practice school a model school and place the best teachers available in charge of the classes. They should be paid a higher salary than is paid teachers in other schools because of the greater responsibility of the position. This school should be used as a school for observation. In this way a series of systematic observation lessons may be planned for the juniors, two hours per week, a portion of which time might properly be used in assisting the class teachers by instructing groups of pupils and by coaching slow and backward pupils.

A first class model school is a good school for teachers in the grades to visit occasionally.

3. Arrange with four or five neighboring schools for opportunities for practice-teaching, three seniors and a critic to be assigned to three classes in each of the several school buildings. By this arrangement, there will be a saving in the salaries of fifteen or eighteen teachers, which will much more than offset the extra expense of employing skilled teachers in the model school. In this way the teaching experience of the pupil-teachers can be made much more valuable. If they are shifted from one school to another at the close of the first term, they will gain experience under normal conditions; they will be supervised by at least two critics, and the critic teachers will see that the children suffer no loss by these changes.

4. Insist upon a high standard for entrance to the City Normal School, and limit the number of admissions to fifteen or eighteen to each class. Add to the faculty a college graduate who has specialized in the teaching of English. By raising the standard of scholarship, and by limiting the number of admissions each year, a better trained product will be available for service in the teaching ranks. Any attempt to train in the City Normal School all of the teachers needed from year to year is a great mistake. There can be no greater misfortune to any school system than to have a steady inbreeding of home talent. The Board of Education should insist upon the selection of at least one-third of the new teachers each year from outside the city limits, or from other training schools than the Bridgeport City Normal School. New blood, new ideas, different courses of training, will bring new life and enthusiasm into the entire teaching body.

It should be kept clearly in mind that the schools exist solely for the children. Whether the teachers live in Bridgeport or Nova Scotia, whether they were trained at home or away, whether their fathers pay taxes or not, is of no consequence. The children deserve the best teachers that it is possible to secure for the money available.

VII. THE HIGH SCHOOL.

The present high school building is now quite inadequate to house the school properly, and unequipped for proper instruction in the present courses of study and unadapted for the introduction of the needed new work. As this is fully acknowledged, the defects in the building itself need not be stated.

Many of the obvious weaknesses of the school on the educational side are direct consequences of the unhappy physical conditions under which the work is being conducted.

Equipment.

The equipment is absolutely inadequate even for the work now undertaken. There is need of equipment in science, in the commercial department and in history. There is need of library, shops and gymnasium. There is need of improved and additional textbooks.

A striking handicap upon a very important class of pupils occurs in the case of the group of normal preparatory girls taking physics. In the absence of proper room and adequate equipment, the instructor faces the alternative of giving laboratory work to the normal preparatory class or to the college preparatory class; and he has not unnaturally chosen to give the advantage to the pupils bound for college.

The limitations of the present buildings preclude to a considerable extent the installation and effective use of such equipment as the school should have.

The Program of Studies—Recommendations.

1. Develop the present commercial course into a coherent four-year course, instead of the present three-year course with an extra "optional" year (on paper) that no pupil takes because it is not seriously offered.

2. Arrange the first two years of this course, or construct a more or less independent two-year course, so as to offer alongside the full commercial course a short clerkship course of two years' training.

3. The subjects placed in the third and fourth years of the school program as reviews of college preparatory work (algebra, geometry, ancient history) amount to mere coaching classes for the college entrance examinations, and, if retained, should be taken only by pupils actually going to college, so that others could apply this time more profitably.

4. Discontinue Greek. It is not required for college preparation and is being taken by extremely few pupils. Its retention in the course involves an extravagant use of teacher time in view of the greater needs of the school.

5. Arrange the first two years of the Latin work of the school so as to form a rounded two-year course in Latin (including an attractive and varied second year assignment in place of the four books of Caesar's Gallic War) for the advantage of pupils not going to college but wishing the benefit of the two years of Latin.

(The following recommendations relating to industrial courses are intended to apply a year hence, or whenever the new building, now assured, shall be ready for occupancy.)

The present "industrial" and "domestic art" courses are in need of development, hence:

6. Construct a full four-year industrial course related to the major industries of the city. Arrange the first two years of this course so as to offer a short industrial course for boys of fourteen to sixteen years of age, and particularly in the interest of those who will leave at the age of sixteen.

7. Construct a full four-year domestic science course. Arrange the first two years of this course so as to offer a short domestic science course to girls of fourteen to sixteen years of age who will leave school at the age of sixteen.

Arrange these courses as a unified department of the High School, to be known as "The Industrial Department." See p. 58.

Teaching Staff.

Here one applies the tests: (1) Individual scholastic equipment and personal power; (2) Efficiency of classroom method and management; (3) co-operation and esprit de corps; (4) Actual results in the habits and attainments of the pupils.

As to individual scholastic equipment, the faculty, with only a very few exceptions, have records indicating adequate attainments.

The academic degrees held by most of the members of the faculty were awarded by such colleges as Yale, Williams, Wesleyan, Cornell, Smith, Harvard, Columbia, Mt. Holyoke, Wellesley, and Middlebury. Seven members of the faculty are Masters of Arts from Yale, Wesleyan, Columbia, or Univarsity of Cincinnati; and one is a Doctor of Philosophy of Yale.

In the matter of personal power, classroom efficiency, and actual results being attained, the faculty appears to be on the whole a satisfactory corps, but not a distinctly strong corps. Though further examination might establish a different result, the grouping seems to be: Apparently possessing special merit, 4; apparently satisfactory, 21; seemingly doubtful cases, 3; apparently unsatisfactory, 3; —total, 31.

To this corps should be added in the new school laboratory assistants for the science teachers, a regular librarian for a regular library, teachers of physical education, as well as teachers for the new academic and industrial subjects that may be introduced.

It is a pleasure to record the kindly and interested attitude of the teachers and their evident good will toward the pupils. And to the systematic and encouraging manner of the teachers, the pupils show a responsiveness that makes for good discipline in classrooms and steady progress in their studies. Furthermore, all the teachers seem desirous of rendering industrious, loyal service to the school.

On the other hand, in visiting classrooms and observing actual teaching exercises throughout the school, one notes insufficient attention to the technique of the recitation and the principles of class teaching. In some cases a teacher's questioning was conducted in a slow and halting manner. Again the questions were of a rather rambling character instead of being logically sequential. Frequently the suggestive question was used, and the teacher's questions and comments together amounted practically to reciting for the pupils. Particular pupils were made to respond to questioning for an overlong time, so that too few of the class participated in the exercise; and there was opportunity for the majority to indulge in mind-wandering and to lose interest in the recitation. Often questions were so framed as to require merely monosyllabic answers from the pupils, when more skillful phrasing of the question would have elicited more educative responses. Some teachers permitted the answering and discussion to come almost entirely from volunteers, with the result that repeated responses were given by certain pupils while others contributed nothing, and might have been not even giving attention to the matter in hand. In some upper class work the teacher's questions and comments obviously indicated the aim of direct coaching for college entrance examinations instead of making the most educative use of the subject matter. Only exceptionally did the teacher appear to realize the value of attention to the assignment of work to be done in preparation for the next recitation period,

although it is well known that neglect of the assignment means loss of opportunity to secure good attack upon home work and application exercises.

The conclusion to be drawn from the foregoing observations is that the average level of teaching efficiency in the school should be higher than it appears to be. Certainly much improvement could be effected by sympathetic, persistent, and capable supervision of the helpful and constructive sort. In this school, as in many high schools there is need of bringing teachers to realize the fact that, in order to make the most efficient use of the recitation time, the teacher must not only master the content of the subject to be taught but he must also study assiduously the art of presenting the subject in class instruction.

Vocational Guidance.

Something should be undertaken in this direction. What is now being done in various places may seem excessively crude and awkward, but the movement has great possibilities; and already it has done the important thing of drawing some attention off the subjects of the curriculum to direct attention toward the boy and girl, with the excellent result that the need of considering their individualities is being felt. The present hit or miss method of taking jobs and eventually finding or not finding a calling, must be reformed; and the public school (in co-operation with the bureau for granting work permits) appears to be society's most available agency for effecting this reform.

Administration.

The principal should have a clerk on full time assistance, and then this clerk should be kept fully occupied in order to: (1) accomplish much more in records, reports, statistics, etc., than is now done; (2) to set the principal free from the office for actual supervision of the school and improvement of the educational results being attained.

Although the discipline of the school is undoubtedly good, certain improvements may be suggested. The hall order during changes of classes would be better if running along halls and on stairways were absolutely forbidden, and if the talking permitted during the changes were kept within more moderate tones. In some rooms there is unreasonable noisiness and over-loud talking during the few minutes before the signal for the beginning of recitations is given. It is not pleasant to see the pupils in room after room rising instantly and hurrying from the room on the stroke of the bell, instead of awaiting a dismissal signal from the teacher.

With thirty-one assistant teachers for a school of about 850 pupils the average number of pupils per teacher is kept down to a satisfactory ratio. It may be questioned, however, whether the arrangement of the pupils into recitation classes has been as evenly made as was possible. In the task of constructing the school schedule for each semester the principal should have the assistance of a selected teacher who should receive extra compensation for the extra service rendered. The schedule distinction between prepared and unprepared periods is not strictly followed as the instruction actually goes on; and the question arises, whether this distinction may not advantageously be abandoned. Such a step would be followed by an improved mode of counting credits for diploma. The present plan of excusing from the semester examinations those pupils who have term averages above a certain mark is open to question in view of the fact that at least some of the teachers consider that some excused pupils ought not to have been excused. There appears to be an undue amount of attention to marking, tests and semester examinations, but as long as these examinations are held, they should be conducted as exercises having definite value in the curriculum; and no pupils should be excused from them. The mode of enrolling pupils in each of the four years of the school seems peculiar in view of the fact that a pupil does not get second year enrollment until he has passed every item of his first year's work, nor third year enrollment until he has passed all the second year, and so on. It would seem that a pupil is entitled to the higher enrollment as soon as he has passed more than half of the lower year's assignment; and this mode of enrolling would encourage pupils to go further through the course, and would also represent more truly the attainments of pupils and their progress toward the diploma.

With additional clerical assistance to relieve the principal of routine matters and petty details, he could get into close touch with the actual teaching of his assistants, so as to unify and elevate the aims of instruction in the various departments, and improve the recitation work throughout the school. By setting an example of progressiveness, assuming professional leadership, stimulating a faculty to do their best work, a principal can improve the attitude and the work of even his weakest teacher. In the matter of textbooks, for example, some of the texts in use in the high school are by no means the best now available; yet where the pupils furnish their own books it would appear to be exceptionally easy to keep the textbooks absolutely up to date. Teachers must be kept informed about new books, new apparatus, improved historical and literary materials for school use; for even if much of this new equipment were not obtainable because of lack of funds, the teachers are sure to get new and valuable ideas from continual examination of the latest teaching paraphernalia. Faculty meetings also, and particularly departmental conferences, can be made occasions for lively professional discussions, instead of being uninteresting sessions for the settlement of petty disciplinary and routine matters.

General Impressions of the High School.

Extremely parsimonious administration. A school body of boys and girls exhibiting great possibilities, but sadly limited in the educational experience actually open to them.

A corps of teachers not markedly progressive as a whole, though noteworthy exceptions stand out.

Certainly a principal cause of the weaknesses that appear to characterize the school is to be found in the extremely unfavorable conditions as to building and equipment under which the school is being conducted in a practically continuous hurrying of recitations from early in the morning until late in the afternoon.

Future Extension of High School Opportunities.

The enrollment at the High School is less than one-half as great as it should be in a city of Bridgeport's size.

Doubtless the unsatisfactory conditions under which the high school work is carried on at present will account for this in part.

It is evident, however, that features are lacking which in a high school in an industrial city are indispensable. The industries need trained superintendents and foremen of departments and draftsmen. The High School ought to aim to furnish them, and the boys and girls of the city who are so minded should find in the public high school opportunity to prepare for such positions of responsibility while getting a thoroughly good general education.

The new high school building, the erection of which on a central site is now assured, should afford such opportunities in its industrial department. The following recommendations are made for the development of such a department:

The Industrial Department.

The industrial department should be established for the benefit of pupils who are ambitious enough to desire a high school education, but who expect to go to work at the close of the high school course The demand for preparation for technical colleges should be encouraged, but this demand is met by the classical department. College preparation should not be the aim of the industrial department. Its main object should be to give a high school training that has a real bearing on the life which these children are going to live.

Throughout the department, the work should be intensely practical,—the value of a complete forge shop is questionable; courses consisting of a series of exercises or models would not function; the usual type of wood turning course would have little place in a Bridge-

port high school. Mechanical drawing, however, should be a very important feature and should be conducted on the basis of a thoroughly modern industrial draughting room. Courses in pattern-making, foundry work, and machine work can all be made to serve the demands of this department.

The shops should be distinctly industrial, both as to arrangement of their equipment and the type of work done in them. The boys should be given experiences in producing actual machines, engines, or motors, from the making of the drawing and the pattern, to the completion of the project in the machine shop. The girls should have real dressmaking, real millinery, and real housekeeping, rather than laboratory exercises.

The equipment of this department will require approximately twenty thousand (20,000) feet of floor space, and will involve an expenditure of about twenty thousand ($20,000) dollars.

There are few technical high schools in the United States which serve the purpose which needs to be served by the industrial department of the Bridgeport High School. It is not safe, therefore, to copy technical high schools of other cities.

Bridgeport needs to develop high school industrial training of the type adapted to her own particular needs.

Rough Estimate for Industrial Equipment.

For Machine Shop,	$12,000	4000 to 6000 sq. ft.
" Wood Shop,	3,000	6000 " "
" Foundry,	1,000	2000 " "
" Cooking,	1,000	1200 " "
" Sewing,	750	1800 " "
" Drawing,	1,000	2000 " "
	$18,750	19000 " "
Maximum cost,	$20,000	20000 sq. ft.

Academic Work.

The class work should not be a duplication of that given in the classical department, but should consist of special courses given by special teachers. The subjects should be:

1. English
2. Applied Mathematics
3. Industrial History
4. Civics
5. Physiology and Hygiene

Laboratory Work—Boys.

The laboratory work for boys should be distinctly industrial. Those phases of physics should be selected which have industrial applications such as:

1. Testing of metals, cements, woods, etc.
2. Effects of heat on metals
3. Distribution of power
   (a) Mechanical
   (b) Electrical
4. Chemical reactions most used in local industries

Laboratory Work—Girls.

Laboratory work for girls should apply to domestic science and deal with:

1. Foods,—elements, chemistry of
2. Textiles,—sources, tests, properties
3. Sanitation

Shop Work.

	First Half	Second Half
FIRST YEAR.		
	Wood work 1. Simple projects (that are needed) 2. Study of wood trusses (with tests) 3. Concrete forms (with study of concrete)	Pattern making
	Mechanical drawing, partially related to shop work.	
	First Half	**Second Half**
SECOND YEAR.		
	Pattern making	Foundry work
	Mechanical drawing, partially related to shop work.	
	First Half	**Second Half**
THIRD YEAR.		
	Machine work	Machine work
	Mechanical drawing, partially related to shop work.	
	First Half	**Second Half**
FOURTH YEAR.		
	Machine work	Machine work
	Mechanical drawing, partially related to shop work.	

Each student should participate in carrying some one project from the drawing room through all of the departments, as, for instance, a gas engine, an ice machine, an electric motor.

Electives should be permitted in the third and fourth years for specializing in drafting, architectural drawing, wood working, or electrical construction.

Domestic Work—Girls.

Sewing (plain)
Cooking
Dressmaking
Millinery
Applied design
Costume design
Household accounts
General housekeeping

Electives should be permitted in the third and fourth years for specializing in advanced domestic science, domestic art, or designing.

VIII. THE INDUSTRIES OF BRIDGEPORT.

A scheme of education that ignores the circumstances surrounding the individual is misdirected and wasteful. Education is not limited to the acquisition of knowledge that is stored up in books. It is more than this. It is in part the adjustment of the individual to his environment, and in part fitting the individual to improve his environment; the more real the adjustment, and the greater the intelligence, the more efficient the education.

The majority of workers in Bridgeport are employed in manufacturing. A great proportion of the children will go into the factories and shops when they leave school. Each month about 150 children apply for working certificates, seeking to take their places in the life of the city. If an intelligent report is to be made on the school system of Bridgeport, it is just as important to study the industries as it is to study the schools. All that has been said upon the subject of industrial education, and all that follows relating to that topic, is based upon as careful study of the industries of Bridgeport as has been made of its schools.

Conditions of Employment.

The industrial conditions in Bridgeport are largely the result of the development of automatic machinery which has led to the establishment of many manufacturing plants in the city. There is a great variety of output, including automobiles, brass tubing and castings, corsets, electrical fixtures, electric cable, cartridges, hardware, machine tools, automatic machines, silverware, textiles, typewriters, talking machines, valves, paper boxes, etc., etc. In spite of this variety of output, there is much similarity in the operations necessary to

produce it; the use of metal predominates; the machinist, as a mechanic, is at the bottom of all production,—his hand is seen in the building of machines to equip plants, and his presence is needed in the tool-rooms which are maintained by all the large plants.

The development of the automatic industries has opened up a large field of unskilled labor for boys and girls in operating presses and automatic machines. This is attractive to them because it offers better pay for beginners than other lines of work. The children who enter this field are usually the retarded children who leave school from the lower grades, and they have little difficulty in finding work of this kind. Girls are more desired, and receive better pay than boys doing similar work. Their work is more satisfactory, they stand the monotony better, require less watching, and are more steady and less careless than the boys. This applies especially to plants in which the output is controlled by the speed of machines, and which are run on a piece-work basis. Boys are employed in certain cases, because the concerns cannot pay the wages which the girls are able to demand. For instance, girls operating machines on a piece-work basis receive from six to ten dollars per week, the boys in parallel lines receiving only from five to six dollars per week. The apparent advantages of the field of unskilled labor, namely, good pay at the start, the need of little previous training and the ease of securing employment, are more than counterbalanced by the disadvantages, which are that the work offers little or no advancement; it is entirely automatic, so preventing mental development; and in later years, when nimbleness and speed are lost, the worker often cannot find any profitable employment.

A much better, though somewhat limited field for the young workers is offered by the recognized trades. These are usually entered through apprenticeship, but can be entered also by the aid of special schools co-operating with the shops, or even by "stealing the trade." Though the pay is smaller at the beginning, and the worker must be from the non-retarded class, and from sixteen to eighteen years of age, this way leads to the acquisition of a skilled trade, besides developing the all-round ability of the worker, and gives the prospect of future advancement.

There is another line of skilled work open to boys, which is quite distinct from the well known trades. It may be called "assembling and adjusting," and offers a large field in Bridgeport. A boy should begin early at this work, for mechanical training in general is of no assistance; the work depends on nimbleness of fingers and acquaintance with the details of the product, rather than on general mechanical ability. In many important lines, this work is classed as skilled, and has a good future prospect.

Another field outside of the shops and factories is to be found in stores and commercial houses. These employ, on the average, a better grade of help than is employed by the shops and factories. The records of the State Agent who issues working certificates show

that in most cases the large majority of children in the shops have been retarded in school; whereas the stores take boys and girls from higher grades, and the ages of these children indicate that most of them are bright children who passed through their schools without retardation.

Working Certification.

Connecticut is progressive in her child employment law. Every child wishing to enter employment under the age of sixteen must obtain a certificate from one of the State Agents; in order to secure this he must give evidence that he is fourteen years old, that he can read and write and solve examples in whole numbers and fractions; no certificate is issued to a child who appears to be physically unfit for employment. The name of every child who receives a certificate, together with his place of employment, is kept on record until he has completed his sixteenth year. The employer must send a notice to the State Agent's office when a child is employed and when the child leaves his employ; and, at each change of employment, the child must obtain a new certificate. If a new position is not reported in one week, a letter is sent to the child's parent or guardian, asking for a report as to his employment. If no satisfactory reply is made, the Agent is sent to investigate.

The Bridgeport Agent has carried out the law so efficiently that out of 3000 children looked after in the Bridgeport district, only four, it is said, have proved to be chronic loafers. A marked decrease in the number of children on the streets has become apparent, and both parents and children have come to realize that all children between the ages of fourteen and sixteen must be either in school or at work and properly certificated; and that the State has a system and the machinery for knowing where the children are.

There are, however, certain improvements to be recommended, if the city is to realize the full benefit of this system. The State law permits a city to establish the grade that a child must complete before taking out working papers. Under this act a city school board may require the child to complete a certain grade in addition to meeting the state requirements of reading, writing, and arithmetic. Many cities have acted on this provision with varying standards, but the Bridgeport School Board has not taken any action. As a result, children from the third, fourth, and fifth grades are applying for working certificates, although some have to hire tutors to enable them to pass the Agent's examinations. The Bridgeport Agent has recently ruled that applicants shall have reached the fifth grade, but this means that only the fourth must be completed. For the protection of the efficiency of the Bridgeport school system, it would seem essential that a fairly high grade requirement be established; and for the protection of children against going to work before they are qualified to meet the serious task of earning a living and becoming American citizens, the completion of the sixth grade is the lowest

advisable requirement. The completion of the fifth grade might, however, be the extent of the requirement for a year or two.

Another development, much to be desired, is the establishment of special classes for the foreign born and backward children. At present there is no provision in the Bridgeport school system for these children; regardless of age they must take their places in the grades according to academic standards. In justice to the foreign born children who come to Bridgeport, and in justice to the young children in the lower grades, there should be classes for meeting the needs of these handicapped, but by no means stupid, children. It is exploitation if they are given working papers before they have their educational equipment, and it is a hindrance to the progress of the lower grade classes to have these older children in them.

It would be well, also, if the law controlling the issuance of working certificates could be extended to include other classes of children. At present it can be made to apply only to those in mechanical, mercantile, and manufacturing trades. It is the group of children going into "blind alley" occupations,—the boys who set up pins in bowling alleys, usher in moving-picture shows or theatres, messengers, newsboys,—these are the children who most need protection.

Finally, much good could be accomplished by closer relations between the School Department and the State Agent's office. The schools should know when a child has received working papers, and the Agent would profit by a knowledge of the child's school history. A very great help would be the establishment of a vocational guidance department which would act in conjunction with the School Board and the State Agent's office. The value of such a department has been alluded to in connection with the High School.

Summary of Tabulation of Working Certificates in Bridgeport, compiled from data in the State Agent's Office:

September, 1911, to December, 1912, inclusive.

Total number issued to boys	1244	
Total number issued to girls	953	
		2197
Total number given to those 14 years old	1192	
Total number given to those 15 years old	972	
Total number given to those 16 years old	51	
		2215
Discrepancy		18

Nationality of foreign born:

Austrians, Hungarians	138
Italians	122
Russians	44
English	31
Germans	12
Norwegians, Swedish	11
Canadians	9
Irish	9
Scotch	5
Polish	5
Turkish, Syrians	4
Bohemians	2
Spanish	1
Total number of foreign born	393

Total number employed in factories	1476
Total number employed in stores	465

Number of certificates issued to children from the—

Second grade	10
Third grade	49
Fourth grade	192
Fifth grade	564
Sixth grade	541
Seventh grade	401
Eighth grade	169
High school	57
Ungraded	200
Total	2183
Discrepancy	32

Relation of the Schools to the Conditions of Employment.

If the schools are to meet the needs of the people of Bridgeport, what are they doing in preparing the children for the industrial and commercial life of the city? What kind of training are they offering to children who have reached fourteen, the age of certification, and are leaving school and joining the ranks of unskilled labor? These questions are of vital importance if the schools are to serve the industrial needs of a people whose main occupations are of a mechanical or commercial nature.

The schools have been notably conservative. As the industries and business life of the city have undergone changes almost revolutionary the schools have made but few concessions to these new conditions of life. Drawing, to be sure, has been introduced owing to pressure from the industrial field but it has now lost its vocational significance. Cooking and manual training have been given the place in the school system which is usually assigned to these subjects elsewhere without much emphasis upon their industrial significance.

Very little can be pointed out in the school curriculum that indicates a real adjustment to the industrial life of the community, or, what is equivalent, the most imperative needs of the majority of the children. Reading, writing and arithmetic are necessary for all, of course, and, for those going early into industrial life they are their vocational equipment; but these subjects need concrete applications to be taught effectively. Children are not successful in applying fundamental principles to concrete instances without being taught definitely how to make the applications. At present the schools are giving the fundamental principles, but are not looking to the activities of the local community for the application.

All children are put through the same processes regardless of their future prospects. Even if all were going to remain through the eight grades of the elementary course and enter the high school, this plan could not be fully defended, but the facts afford no justification for the prevailing practice. A very large majority of the children leave school early and go into definite lines of employment, a circumstance which has little, if any, effect in shaping the scheme of studies for the grammar grades.

Hand Work and Household Management.

Bridgeport is a city of workers. To make the school life reflect the activities of the city practical work must be introduced into the school system. The school system can adjust itself to the present industrial situation in one respect by making local applications of the bookwork and by organizing hand work throughout the eight grades. The handwork should be planned to give the children a series of experiences in the use of varied materials and processes that will acquaint them with the activities of the city. Real things made by the children offer the best opportunities for teaching the three "R's" for they make plain to the child that the three "R's" have application to the affairs of real life. Hand work makes the work of the school seem real to the child and gives him an introduction to the world outside the school. His thought is stimulated, his ingenuity is aroused, and school means happy experience instead of monotonous drill.

Following is a suggestive outline of hand work for all grades:

HAND WORK FOR GRADES I TO V.

Boys and Girls—in Classroom with Regular Teacher.

GRADE VI.

Problems in construction representing	Materials to be used.
1. The Home	1. Paper
2. Scenes from Stories	2. Cardboard
3. History	3. Wood
4. Neighborhoods	4. Clay
5. Handicrafts	5. Cement
6. Textiles	6. Plaster
	7. Textiles
	8. Colors

Shop Work for Boys—1½ Hours Per Week.

Mechanical studies as	Materials used.
1. Elevators	1. Metal
2. Cranes	2. Wood
3. Water Motors	
4. Model Machines	
5. Model Framing	

For Girls—1½ hours per week.

First half year ..... Sewing Second half year .... Cooking

GRADE VII.

Shop work for Boys—1½ hours per week.

Concrete work (forms made of wood)	Materials used.
Foundry work	Wood
Flask	Metal
Tools	Cement
Soft casting	
Railroad models	
Boat models	

For Girls—1½ hours per week.

First half year ..... Sewing Second half year ..... Cooking

GRADE VIII.

Shop work for boys—1½ hours per week.

Wood problems in the making of	Processes taught
furniture or	Metal beating
A problem in metal as	Soldering
Model steam turbine	Drilling
Sheet copper and	Punching
Brass working	Filing
	Threading

For girls—1½ hours per week.

First half year ..... Sewing Second half year ..... Cooking

Besides giving a boy general information and mechanical experience, a scheme of this sort, with its variety of processes and materials, is affording him a try-out experience, to determine what his tendencies are, and what ability he shows as a young boy. Many boys have found themselves and learned what lines of work they should or should not go into by experience of this sort.

The girls in the sixth, seventh and eighth grades are in as great need of practical work as the boys, though of course of a different type. Whether our girls are going on through high school or whether they are going into the shops when fourteen, they are ultimately to be managers of households. One of the greatest social services that the school can render, therefore, is to give them some practical experience looking toward the wise management of a home. In school they should have real problems in sewing and cooking; they should be taught household sanitation, proper methods of cleaning, and practical hygiene. This means taking problems such as exist in the average home and working them out in school. In order that every girl may receive a fair share of cooking and sewing, it is proposed that a semester should be given to each, in alternation, through these three grades.

Additional shops and cooking centers will be needed to handle this work effectively, and the teaching force must necessarily be increased. It will require three men teachers to give the boys of the sixth, seventh and eighth grades shop training for one and one-half hours per week. Two cooking teachers and two sewing teachers will be needed to instruct the girls. Five shop centers and four cooking centers will probably be needed. The sewing can be done in the class room. This work should be done within the regular school hours and should not, as is the practice at present, begin earlier and continue later than the regular school sessions.

Five shop centers are needed. They should be located as follows:

The first center at School No. 3. One man in four days will cover Schools No. 3, No. 4, No. 5 and No. 23.

The second center at School No. 1. One man in three days will cover Schools No. 1, No. 6, and No. 7.

The third center at School No. 10. One man in two days will cover Schools No. 8, No. 9, and No. 10.

The fourth center at School No. 14. One man in four days will cover Schools No. 12, No. 13, No. 14, No. 16, No. 17, and No. 18.

The fifth center at School No. 19. One man in two days will cover Schools No. 19, No. 20, and No. 22.

Four cooking centers are needed. They should be located as follows:

The first center, at School No. 3. One teacher in two and one-half days will cover Schools No. 3, No. 4, No. 5, and No. 23.

The second center at School No. 7 (as now located). One teacher in two and one-half days will cover Schools No. 1, No. 6, No. 7, No. 8, No. 9, and No. 10.

The third center at School No. 14. One teacher in three days will cover Schools No. 12, No. 13, No. 14, No. 16, No. 17, and No. 18.

The fourth center at School No. 19. One teacher in two days will cover schools No. 19, No. 20, and No. 22.

Prevocational Work.

A study of the situation in Bridgeport discloses an imperative need for prevocational training for those children who must leave school as soon as they reach the age of fourteen. It has been frequently said that the best thing the school can do is to give these children the best education it can, and let them go to work, but the question remains as to what is the best method of giving them this education. There is evidence that the present course of study, laid out alike for all children, gives but little education to this particular group, and that little falls far short of life equipment.

A much more efficient training can be given these children if they are grouped by themselves and trained in a special line of work adapted to their immediate future needs. In the regular grammar school buildings, prevocational groups can be readily organized, without any strict regard to grade standing, for the boys and girls from twelve to fourteen years of age, who will leave school as soon as they are fourteen. Three hours of fundamental work in the three "R's" should take up the morning, and two hours in the afternoon should be given to practical work. This should not be regarded as manual training, but should be real vocational experience, and should include commercial work such as typewriting, filling orders from a stock room and doing up packages; also mechanical trades such as metal work, carpentry, masonry, shoe repairing, foundry work and printing, with strong emphasis on practical drawing. Though girls as well as boys should have the commercial experience of typewriting and filling orders, a large proportion of their time should be devoted to household management, including sewing and cooking. If time should permit, the girls might have a short factory experience in the making of paper boxes such as are needed by the school department.

Prevocational work is not a duplication of the function of the trade school. The trade school cannot receive boys or girls under fourteen years of age. Moreover, it must keep its pupils two years in order to give them a fair training. Since the records of the State Agent indicate that a great many children leave school as soon as they are fourteen, it is a social service to the city to see that before they leave these children are given special attention in school with work adapted to meet their special needs. This work is known as prevocational.

The afternoon work will involve the presence of two teachers with a class, but the cost of the instruction will be reduced as the class teacher becomes sufficiently acquainted with the trade processes to handle them himself.

Mornings, Boys and Girls, twelve to fourteen, 3 hours.

1. English
2. Applied arithmetic
3. Industrial geography (beginning with Bridgeport)
4. Industrial history, including citizenship

Afternoon, Boys—2 hours.

A series of short commercial and trade experiences to be taught by workers actually engaged in the following lines: (Regular class teacher to be present).

1. Woodwork
2. Metal work
3. Mason work
4. Electrical work
5. Commercial work
   - (a) Salesmanship
   - (b) Typewriting
   - (c) Filling orders
6. Printing

Afternoon, Girls—2 hours.

A series of domestic, industrial and commercial experiences to be taught by workers actually engaged in the following lines: (Regular class teacher to be present).

1. Sewing
   (articles needed)
2. Cooking
   (plain and simple)
3. Household management
   (sweeping, cleaning, etc.)
4. Commercial work
   - (a) Salesmanship
   - (b) Typewriting
5. Paper box making

A careful record should be kept of the success of each boy and girl in the varied lines of work.

Drawing.

The course in drawing extends throughout the grades, but only one teacher of drawing is employed. As there are over 15,000 children in school, one person cannot exert a great influence in their work. Her function is that of a supervisor, visiting the classes and holding teachers' meetings. Drawing is not an expensive form of

instruction to maintain, but if properly conducted, is a very valuable factor in modern education. But with lack of sufficient teaching force and with limited materials, the great possibilities of the subject are not being realized.

The character of the work outlined is fairly typical of that found in many cities. An effort is made throughout the course to develop in the pupils an appreciation of the beautiful. The principles of design are taught, and simple applications are made by constructing objects of paper or cardboard. A more practical application may be found, however, in the girls' sewing and the boys' shop work.

In the lower grades, where hand work and drawing are closely related, there is enough work for three visiting teachers or assistant supervisors who should be acquainted with both hand work and drawing. Under the direction of a general supervisor, the assistants should give demonstration lessons from class to class, allowing the regular teachers to continue the work between visits.

In the higher grades this arrangement would not be satisfactory. To give instruction in drawing successfully in these more advanced classes, the teacher herself should have some special ability in this subject. A departmental system could be organized, without extra cost, whereby some teachers with ability in this work could exchange classes with such teachers as lack this ability.

The teaching should be broadened to include that part of drawing which is related to industrial work. At present only the artistic side is emphasized, while the mechanical side, which especially needs emphasis in Bridgeport, is neglected. The drawing teacher has recognized this lack, and with the teacher of manual training is considering how this need may be met, although thus far nothing has been arranged. It is important that in the development of this mechanical side of drawing, as well as in applied design, the handiwork and the drawing should be closely related. Boys, especially, should be given the rudiments of mechanical drawing. Boys who leave school early cannot expect to be taught draughting, and young boys cannot handle drawing instruments except those of a very crude type. The value of using such instruments is distinctly questionable. But as there is an increasing demand on the part of shops that boys be able to read drawings, and to make simple sketches of shop objects, they should be taught how to make three views of an object, and should be trained to make simple freehand sketches. An educational opportunity is utilized, also, when boys are taught to make simple working drawings of the things they construct in the shop. It is not desirable that grammar school boys be given a set course in mechanical drawing, but when they make projects they should be taught to make working drawings of those projects.

In the Industrial department of the High School, a strong course in mechanical drawing is essential.

The Industrial School for Trade Training.

The Bridgeport Trade School does not furnish all of the industrial education that is needed in the city. It has a capacity in the boys' department of from 150 to 175 pupils, but the attendance is far below that, in spite of the fact that a large waiting list is reported. Bridgeport needs an industrial school rather than a trade school. To supply this need, the present trade school might be converted into an industrial school or an independent industrial school might be organized within the school system.

The organization of this school should not be on the program scheme, common to most schools, but on the project scheme, with requirements varied according to the nature of the work done. Each boy's drawing and mathematics should definitely apply to each project he has to work out in the shop, and not be a part of a fixed course; and each project should involve a complete process from raw material to finished product. One-half the time should be given to theoretical work as drawing, shop mathematics, applied science, and citizenship. The day should not be too long for teachers and pupils to maintain an efficient standard of work to the end. Six hours a day is the usual limit.

The environment should be industrial and the equipment as nearly like that of industrial shops as is possible. The course of training should be especially adapted to the industrial activities of Bridgeport, and should include machine work, tool making, die work, stationary steam and electrical engineering.

The sources for securing shop work should be as broad and varied as possible. The school should turn out equipment and make repairs for the school system. Besides this, each industrial department should manufacture a stock product of its own, well adapted to trade training, with the output under control of the school. It should never underbid market prices.

Provision should be made for those who cannot afford to give full time to trade training. Some of these can give a day each week to improve their knowledge of the theoretical side of their work, and may be classed as "part time" students. Many children, employed in the industries who have not completed their work in the three "R's" should attend this school one-half day per week as "continuation" students. A third class, usually mechanics, cannot give any day time to school work, but would attend evening industrial courses, if they were of short duration and confined to certain single phases of the various trades. For instance, the carpentry department could offer courses to carpenters in roof-framing, blue print reading, estimating, etc., each course to run for six to eight weeks; the machine department might offer similar short courses on the miller, grinder, shaper, etc. In this way those who desired to improve themselves in their trades could secure at once the line of instruction they might especially desire.

The school should have an advisory board, composed of men locally engaged in the lines of work represented by the school, their function being to confer with the directors and instructors. The creation of such a board is essential in order that the work of the school may be kept up to date and continually in touch with local interests.

Three classes or types of instructors are needed in the Industrial School. The shop instruction should be given by trade teachers who have had at least five years' experience as journeymen workers in the trade they are to teach.

Drawing and such related subjects as shop mathematics should be taught by technically trained teachers who are proficient in these subjects and have had some shop experience.

The academic work, including industrial history, industrial geography and citizenship, should be taught by a man with experience as a teacher and in sympathy with the aims of the school.

Outline of Work.

SHOP WORK.

On orders for

1. School departments,—new equipment, repairing, printing
2. Special school output, as
   - (a) Automobile equipment, jacks, etc.
   - (b) Machines, drills, lathes, etc.
   - (c) Work benches
   - (d) Household cabinet for bathrooms, tools, etc.
   - (e) Printing, publication, etc.
3. Outside trade work

THEORY WORK.

Estimates
Specifications
Working drawings and sheets of shop operations

} On everything a boy makes just before he makes it.

Industrial geography,—sources of raw material, transportation and industrial processes
Industrial history
Shop notes with English
Cost records, compared with estimates
Citizenship, civic duties, hygiene

The Employers and the Schools.

The employers in charge of the large plants have shown a particular interest in the problem of adjusting the school system to the special needs of the city. They are willing to give time and effort to assist in solving the problems, for they have real civic pride.

The employers agree in saying that the children coming to them should have all the education possible before they go to work, and that those who go to work early should have at least a thorough

grounding in reading, writing and arithmetic. They heartily approve the plan of making this education extremely practical and commend the courses in household management for girls and manual training for boys. Factory owners do not look to the schools to give children the special training needed for their business, but say, "Give the children good schooling and we will teach them how to do our work." It is only in the skilled trades, in which the apprentice system has been abandoned, that special industrial training is a prerequisite to employment.

Practically all of the employers who were approached on the public school problem agreed that the Bridgeport schools should be well equipped and have the most competent teachers available. They did not hesitate to say that Bridgeport could afford to have thoroughly modern, efficient schools and that if funds were lacking they ought to be appropriated immediately.

The Local Labor Union and Industrial Education.

The labor unions of Bridgeport are not opposed to industrial education, but hold, in accord with the Federation of Labor, that it is a necessity. They realize the present need in this country for skilled workers and the advantage to the workers of being highly trained. They object to anything like training specialists in the schools. They wish the pupils to be trained as all around mechanics and to have courses designed to give them experience in all the processes of manufacture, from the raw material to the finished product. They contend that the schools should not train boys as operators for special machines, since the industrial shops are satisfactorily equipped for that purpose.

The Labor Unions do not seem to be afraid of the competition of schools that do work on a commercial basis, but realize that efficient trade training must be practiced on actual work and not on a series of useless exercises or models. They insist, however, that this practical work should be secured at market prices, not by underbidding.

In the course of this investigation the views of employers of labor and of wage-earners have been sought upon every phase of the local situation that has a bearing upon industrial education. The employers have shown sincere interest in the welfare of the school system, and they favor such a program as will insure for all children as good a general education as possible before they go to work. Many interviews have been held with the members of the Central Labor Union for the purpose of learning what seem to be the principal objections to industrial education as they have seen it in operation in various parts of the country, and to acquaint them with the general outline of the program which it is believed would meet the situation in Bridgeport.

Following is a brief summary of the objections which the wage-earners feel must be met in any proposed scheme:

1. There must be no interference with, or sacrifice of, opportunities for general education.

2. Industrial education must not be compulsory in the sense of prescribing for the individual the kind of occupation for which he must fit himself.

3. The children must be protected from narrow trade instruction exclusively in the interests of employers.

4. There must be no discouragement of the poor man's children from higher professional and technical education.

5. The manufactured products must be disposed of in such a way as to avoid unfair competition with the industries of the community.

6. The aim must not be the training of boys to go into the industries to work for lower wages and thus displace the workers now employed.

7. Parents must not be deprived of the right to control the education of their own children, within the limitations imposed by law.

8. The school day must not be unreasonably long.

9. The real needs of the community and of the children should determine the courses to be offered.

Summary.

The foregoing discussion may be summarized thus:

The development of automatic machinery and the consequent increase of factories has had much influence on industrial conditions in Bridgeport.

The output is of a most varied character, but the fundamental operations necessary to produce it are quite similar and markedly mechanical in their nature.

There is a great demand for unskilled labor which is supplied by boys and girls who leave school from the lower grades; in this field girls take higher rank than boys.

A better, but more limited field, is that offered by the skilled trades, requiring children who are older and of better school standing.

The unskilled field offers, almost at once, all the possibilities to be found in it; the skilled field offers a gradually increasing development in capacity and compensation.

Another line of work, open to boys, which though not yet considered a trade, is classed in some lines as skilled, is that called "assembling and adjusting." The workers in it need to have their training when young; the work offers good future prospects.

Commercial houses and stores attract the boys and girls who have not been retarded in their school work. These enter employment from higher grades than those entering shops and factories.

The Connecticut law requires every child under sixteen, who wishes to enter employment, to secure a certificate. To obtain a

certificate, the child must submit evidence that he is at least fourteen years of age, and able to read and write, and in arithmetic to perform the fundamental operations with whole numbers and fractions. The law also permits school boards to fix a grade which the child must complete before he can obtain a certificate.

To extend the benefits of this system, the following recommendations are made:

That the Bridgeport School Board establish a requirement that every child securing a certificate shall have completed the sixth grade:

That special classes be organized for backward and foreign born children;

That the law be extended to cover groups of children, over whom at present it has no jurisdiction;

That the School Board and the State Agent co-operate more actively, and that a Vocational Guidance department be created to work with them.

To secure satisfactory results in drawing,

There should be three assistant supervisors who can direct the art and hand work of the first five grades;

The teaching of drawing in the grammar grades should be on a departmental basis;

Drawing and handwork for both boys and girls should be closely allied;

The industrial phases of drawing which are at present entirely lacking should be included in the teaching of that subject;

A strong course in mechanical drawing should be established in the Industrial department of the High School.

The State Trade School does not meet the needs of industrial education in Bridgeport;

Bridgeport needs to have an industrial school rather than a trade school;

This school should be organized on the "project scheme" rather than on the plan of a set program;

One-half the time should be given to theoretical work; the rest to practical work;

Six hours' work a day is the proper amount to expect;

The environment of the shops should be industrial;

The work for the shops should be secured from as many sources as possible;

The courses of training should be especially adapted to the activities carried on in Bridgeport;

Provision should be made for those who cannot attend the regular sessions, by the formation of "part time," "continuation," and evening classes;

An advisory board, composed of men engaged in the trades taught in the school, should be organized to keep the school work progressive and in touch with local interests.

The employers are sincerely interested in the welfare of the school system;

They feel that the children who come to them should have as good a general education as possible before going to work;

They strongly favor courses in household management for girls, and manual training for boys;

They believe that Bridgeport can afford to have thoroughly modern, well equipped schools, with the best teachers available and that the necessary funds should be appropriated immediately.

The labor unions in Bridgeport recognize the necessity of industrial training to meet present industrial needs, and for the protection of the workers;

They insist that industrial training in the schools shall not be special, but general, and calculated to produce all-around mechanics;

They oppose a nine-hour day in the schools, as strongly as in the shops;

They do not fear the competition of the schools in industrial work, provided the schools secure work at market prices.

IX. HISTORY.

The leading purpose of the teaching of history is essentially moral. Through history, the learner gets some knowledge of himself, of his fellows, and of his various relationships with his fellows. In other words, the knowledge which he gains of the laws which govern his own life and the life of other human beings, he uses in an eminently practical way; that is, in making the social adjustments which he must make in co-operating with his fellows. And his success in his chosen vocation, or as a worker in any form of community service, depends upon the ability and skill with which he makes such adjustments.

History gives him invaluable aid, not only by furnishing him the means of self-knowledge and the knowledge of others, but it also helps him to understand the social conditions and problems which he must meet and solve as a citizen and as a man in his later adult

life. For these conditions and problems he can best understand by seeing with clear vision how they grew out of the past, or by the study of history.

In helping the child, through history, to gain this invaluable insight into the meaning of his own life as related to other lives in various forms of human endeavor, the teacher's main function is that of a life-interpreter. She stands between the individual life and the life embodied in the historical material, and shows the relation between the two. She and the pupils, therefore, are the main factors in the vital process of education. Books, maps, charts, objects, pictures, stories, poems, and other forms of historical material are subordinate. They are merely the means which are used in achieving the great end in view, —the attainment of knowledge, power, ideals, and of the ability to make the proper social adjustments.

In order that such a purpose may be achieved in any city school system, even to a very limited extent, careful consideration should be given to the following elements: (1) The time devoted to the subject; (2) the materials outlined and suggested in the course of study; and (3) the methods of using and interpreting such material by the teacher.

According to the daily program of the Bridgeport schools, the time devoted to work in history is as follows:

In grades I and II. a single period of fifteen minutes a week; in grades III to VI, a single period of twenty-eight minutes a week; and in grades VII and VIII, two and one-half periods of one hour each, per week. But from many inquiries which were made, it would appear that the time as scheduled in the program is not used in grades below VII and VIII. Practically all the teachers of the sixth grade who were asked about the time devoted to history, answered "twenty minutes a week."

The material as outlined in the course of study is about as limited as the time devoted to the subject. Grades I and II call for history on Monday, the material being left to the discretion of the teacher; grade III, "Stories of American History;" grade IV[1], "Stories of Our Country," and grade IV[2], "Noble Deeds of Our Fathers;" and grades V and VI, Eggleston's "A First Book in American History;" and grades VII and VIII, Eggleston's "A School History of the United States."

This means that the course of study in grades beyond I and II consists of books rather than a definite, concrete and suggestive outline of work to be done. So far as could be learned, however, the books mentioned for grades III and IV were not uniformly read in the various schools; while in grades V and VI only a single little book is read, and that only for some twenty minutes a week. This little volume contains only about two hundred pages. When we call to mind that a very large part of the boys and girls

in Bridgeport leave school by the end of the sixth grade, and many of them by the end of the fifth, we can see how unfortunate it is that so little is done in history in these grades.

Methods of Instruction.

But there is reason to doubt whether in these grades history as history is given serious consideration. In grades V and VI the lesson was invariably a reading lesson, and almost invariably nothing more. In one sixth grade room the teacher said (and many other teachers in this grade said the same thing) that inasmuch as she had only twenty minutes a week, she found it very difficult to get consecutive thought and sustained effort when working under such conditions.

But she, herself, secured good results. In an intelligent and stimulating way she appealed to the sympathetic imagination of her class, and many of them, it was evident, lived over again the life experience of the youthful Lincoln. His self-reliance, his hard life in the backwoods, and his manliness, were all used in an effective way to give a moral uplift to the boys and girls in the class. The teacher was a life interpreter, and for the time being many of her pupils were getting a splendid stimulus from companionship with a noble young soul. It is in such concrete ways as this that boys and girls in the elementary school get some of the finest suggestions as to the rich potentialities of their own lives; it is in such ways that they come under the inspiration of the great leaders of the past. As has been well said, truth finds its supreme embodiment in personality, and there can be no doubt that it is by the effective use of great lives as identified with important events, and as the centers of important movements, that the teaching of history can be made most fruitful in the elementary school.

But it is to be regretted that only a very little teaching of this kind was observed in grades V and VI. As a rule, the teacher's attention was fixed upon the proper pronunciation and meaning of the text, or the mere mechanics of the reading. If a question was asked, it was quite as likely to be on geography as on history, although only a slight effort was made to give the pupils a definite notion of the location of the events narrated. As a matter of fact, the history side of the work in grades V and VI did not appear to be in the minds of most of the teachers. Whatever history the children got, therefore, was as a rule merely incidental. It was very rare that the teacher contributed a single fact or suggestion which did not appear in the text read by the pupil. And this was largely true of the teachers in grades VII and VIII.

But there were exceptions. In one seventh grade room a teacher of sympathetic spirit sought to bring the pupils into vital relation with the life and experience embodied in the text. She criticised them for bookishness,—for giving the language of the text rather

than putting the thought into their own words. She used the deeds and qualities of Washington to teach moral lessons, and she held up his character as an example for the children to imitate.

But, as already suggested, this sort of teaching was rare in either the seventh or the eighth grade. Much of the work was bookish and mechanical. In many cases the teacher held the book in her hand and followed the pupils closely as they, like phonographs, reproduced the words of the text. Very few teachers made any contribution of distinct value in the way of illuminating and supplementing the text or of making it more interesting and vivid. It was merely a study of the text, if by study we mean the attempt on the part of the pupil to learn all the facts which the text contained. It was an extreme type of memoriter work, and from that point of view the pupils met the standards set for them remarkably well and in a really admirable spirit. There was a very pleasant relation existing between teachers and pupils.

There was some good work observed in locating on the maps the events narrated in the text, although such work was not common.

There was practically no evidence that the pupils had read anything whatever outside of their textbook. There were, however, so far as could be observed, almost no books in the school for the children to read, even if they had been expected to do so. This condition of affairs is to be deeply regretted, for in order to do effective work, books to supplement the text should always be at hand.

By such a method as has just been outlined, the children are memorizing the paragraphs and pages of a book, but they are not studying history as the embodiment and interpretation of human life.

Recommendations.

All the foregoing points to a few definite recommendations.

In the first place, more time should be devoted to history teaching in the first six grades.

In the second place, the methods of teaching should be so modified as to make history a vital force in the education of the pupil. History should be made a humanizing factor in enlarging the intellectual and moral outlook of the learner and in leading him to understand more or less clearly his opportunities, privileges and responsibilities as a citizen in a democracy like ours.

But in order to make history a vital force in any school system, it is absolutely necessary that there should be in daily use something more than a single textbook. Even the scholarly and sympathetic teacher cannot secure satisfactory results without having at hand suitable tools and good material. It is just as important for the history department to have good equipment, whether in the grades or in the high school, as it is that the science teacher should have a well equipped laboratory. Maps, charts, objects and pictures must be made use of, or else the teaching is likely to be mechanical and

barren. The school authorities in Bridgeport could not easily make a better investment than by spending a considerable sum of money in supplying the teachers of history, especially in grades VII and VIII and in the high school, with the tools that would enable them to teach much more effectively than they can under present conditions.

In the third place, the course of study in history should be made more definite and concrete. It is not enough to mention a few books, or even to prescribe them for reading and study. Definite work should be outlined and required from the third grade to the high school.

Course of Study.

As a minimum, the following may be suggested:

In the first two grades the children should get some impressions of primitive life—which may be gained largely through simple oral work about the American Indians— and some appreciation of the meaning of a few of our public holidays. In the third grade something should be done in a definite way to give the children pictures of historical scenes and persons in different ages, with the emphasis upon those great leaders who have played a conspicuous part in American history. In grades IV, V and VI, some definite knowledge should be gained of the leading events and of the leading representative men in our national history. The whole period of American history should at least be touched upon before the end of the sixth grade, for it is important to remember that this is a pivotal grade, because in a manufacturing city like Bridgeport, it ends the school life of perhaps a half of the boys and girls. In grades VII and VIII a strong effort should be made to give the pupils a good understanding of what our history means and of the meaning of good citizenship.

In view of the complex conditions of social and political life today, it seems unwise and unfair alike to the individual and to the community at large to do less than this. But even more is demanded if we are to have that high grade of intelligent citizenship that is fundamental to the best interests of our national life. Enough work in general history should be done to make clear, though in a very simple way, how American life had its beginnings and how from its very first stages it was closely related to the life and thought of the European world.

By the use of such a plan, American boys and girls can be given a much more intelligent conception of the meaning of our national life than they can acquire if they are taught that American history began with the discovery of America by Columbus in 1492. If the pupils of grade VI get intelligent impressions of the great fact that American life has all along been identified with the life of the world, they will be more likely to have a realizing sense of the meaning of present conditions and problems in our life as a people

and of the relation of the individual as a citizen and a man to the community in meeting and solving such conditions and problems. If history is taught with this aim in mind, it will be given the prominent place in the school curriculum which its importance justifies.

In the high school, history is accorded a place of prominence, especially in the English course, where Greek and Roman history are required in the Freshman year, Mediaeval and Modern history in the Sophomore, English history in the Junior, and United States history in the Senior year. Much of the history teaching in the high school was good, and some of it was very effective. An excellent lesson was observed in a Senior class which was studying American history. The pupils in the class were required to keep in notebooks, which were handed in once a week, a report of from ten to fifteen pages of reading in some good authority. This work was done with evident intelligence and discrimination; and the same may be said of the use which the class was making of the outline maps.

X. ENGLISH.

"Language and thought are inseparable. Words without thoughts are dead sounds; thoughts without words are nothing * * * The word is thought incarnate." This quotation from Professor Max Müller suggests two very diverse ways of teaching language. The teacher may emphasize the vital qualities of oral and written expression in such a manner that his pupils will feel that words are alive, and capable of expressing very clearly and forcibly every thought and emotion they experience; or he may divorce language and thought to such an extent that children will fail to grasp any practical connection between the language work of the school and their own methods of self-expression. The teacher following the first method will use grammar, punctuation, phonics, spelling, and penmanship merely as a means to an end, thus unifying all language work; the teacher following the second method will use each as an end in itself, thus making language a complex subject of diversified parts and therefore difficult of mastery. The first method is thoroughly modern and vitalizes all language study; the second, timeworn and deadening in its ineffectiveness.

"The Course of Study and Directions" for the teachers of Bridgeport divides the study of English into two parts, Language and Composition. In the work for the elementary school (grades I—V) punctuation and technical grammar are discussed under the head of Language; talking, letter writing, sentence and paragraph structure under Composition; while spelling, phonics, and penmanship are given separate places in the program of studies. Thus there

is little unity in this teaching scheme, and if the teachers follow the daily program required of everyone in the system, they have little opportunity to unify the work for themselves.

The directions for the teaching of technical grammar through the fourth grade, the grade from which the children in any noticeable degree begin to leave school, are both simple and practical. The oral and written use of the various parts of the common irregular verbs and the possessive case of nouns and all cases of pronouns is the complete requirement. This should give the teachers ample time in which to drill upon a few of the most difficult forms of English expression. The real effectiveness of this work, however, lies in its constant application to every day speech. It is not to be found in the reciting of definitions and the giving of mere illustrations of rules, which is the present interpretation of the course by the majority of the Bridgeport teachers.

The composition course for the first four years is as follows:

Grade I[1] Talking.
Grade I[2] Sentences about things, events, or subjects. Words given as a basis. Oral story telling.
Grade II[1] Write sentences about pictures and from story. Oral story telling.
Grade II[2] Narratives of sentences. Write short story.
Grade III[1] Combine sentences. Sentence arrangement.
Grade III[2] Stories from suggested expressions.
Grade IV[1] Letter writing. Paragraph. Reproductions.
Grade IV[2] Related parts of sentences. Character sketches.

The teaching of elementary composition is thus dismissed with the most general directions. "Talking" is about as indefinite a direction as could be imagined. The purpose, the subject matter, the method are left to the teachers and principals to determine largely for themselves. If these directions were later to be interpreted by a competent supervisor of elementary work, through model lessons in the class room and by teachers' meetings, some uniformity of effort might be expected. But since this careful supervision is lacking, there must be uncertainty many times on the part of teachers in following such general directions and, as a result, a constant overlapping of effort. Whether the directions in many cases refer to oral or written composition, it is difficult to determine. The course as it stands, however, suggests that comparatively little time is given to oral composition, i. e., training in larger units than the sentence. This, indeed, is unfortunate when it is recalled how much oftener the children speak than write. Daily practice in oral composition would not only of itself be of immeasurable value to the pupils but it would aid them, to a marked degree, in all efforts at writing. Grade IV[1] seems to be illogically arranged. Work in reproduction is easier than letter-writing, and very naturally prepares the way for a study of the paragraph. A better order would be—reproduction, paragraph study, letter-writing.

The directions for the teaching of spelling in the first four grades are admirable. Teachers are advised to work with this subject daily and in all lessons. Thus spelling is closely correlated with all forms of self-expression, regardless of the subject matter. And if the spirit of the directions is adhered to, the words are not isolated but studied in relation to the context.

If a study of punctuation can ever be separated profitably from composition, the course for Grades I-V should produce results. The lessons advised for the various years seem to correlate naturally with the subject of composition. For instance, teachers are directed in Grade IV[1] to teach letter writing, paragraph structure, and reproduction. In this same year, they are asked to give lessons in punctuating an explanatory modifier, and a phrase out of order. Better far, however, would it be to give the same injunction here as in the course for spelling—"Daily from all lessons."

The discussion of the course up to this point has not taken into consideration the fact that many of the children of Bridgeport are of foreign parentage and hence hear no English spoken at home. The work as outlined thus far has been general and practical enough so as not to hamper any teacher who is dealing with immigrants or the children of immigrants. When it comes to the subject of reading, however, the case is different. All schools should not be required in these primary grades to read the same books. Schools like the Longfellow, in which 97% of the enrollment is made up of Hungarians, should be allowed to use texts especially made to meet their particular problems. Several series have been prepared with the idea of teaching English "by using it in the class-room." The lessons in these texts are so arranged that "the pupil's whole attention should be given to correct pronunciation; he will infer the rules of grammar." And the authors of one series maintain further, "if the pupil always talks and writes grammatically there will be no need of learning rules."

The use of such specially prepared texts, furthermore, would be of great service to the teacher of foreign born children who have been partially educated in the old country. Children of this class are taught to read English largely by the phonetic method. It is not at all an uncommon experience to find these children glibly calling words of whose meaning they have no understanding. A close union of language and thought in such classes would open up a new world to these strangers. This could be effected by using special texts and making the language work objective. These children at present are concerned more in acquiring a knowledge of arithmetic than in learning a new tongue. Their securing a working certificate depends upon their ability to use fractions, not upon their ability to use English. If they can read and write in any tongue, the present requirements of the State law and the Board of Education are satisfied. The Board should, therefore, since it has the power, make the completion of, at first, the fifth and, later, the sixth grade

the minimum requirement for a working certificate, and should also, during this period of change, make sure that these children receive particular training in English by means of specially prepared texts and at the hands of teachers vitally interested in solving the immigrant problem.

Thus far an attempt has been made to estimate in a broad way the efficiency of the course offered in English in the elementary grades. Before passing to the language work of the "grammar school" it might be well to consider briefly what the purpose of such work should be. Probably one of the best ways to discover this is to compare the grammar school teaching in language a generation ago with that of today. The emphasis according to the old ideal was placed upon the study of technical grammar, hence the name "grammar" school. A child's power to express himself clearly and forcibly was determined largely by his ability to parse, conjugate, or to analyze isolated sentences composed by others. Occasionally, he was asked to write a composition. This he did blindly, imitating, no doubt, some story he had read in his reader. When he recited in history or geography, he answered the teacher's questions, aiming as nearly as possible to express himself in the language of the text. Rarely, if ever, he considered these subjects from any other standpoint than the mastery of facts. He learned his spelling mainly from the spelling book and the words he found there he spelled orally or in long lists. Punctuation, if acquired at all, he learned through the memorizing of rules. The old grammar school ideal was, broadly speaking, a knowledge of facts. But today in the most advanced school systems, the child is trained according to a very different ideal. He learns technical grammar and he analyzes as of old, but he does these things that he may know how to eradicate faults in his compositions. In some school systems this correlating of technical grammar with composition is so close that the errors the child makes determine largely the technical grammar he is to study. In other words, he is tested in a knowledge of grammar by his ability to write and speak correctly. He expresses himself daily in small units at his seat or at the board. These compositions are criticised by the pupils and teachers and form the basis of the next day's work in language drill. When he recites in geography or history, he talks from outlines, aiming to give a connected talk upon some division of the subject under discussion. He learns to spell from lists of words selected from his various lessons, from words misspelled in his own compositions, and from spellers which group troublesome words under rules or root stems. He is trained to choose intelligently the punctuation marks that will best suit his own definite purpose. He reads many readers and in the last years of his course he studies several masterpieces suited to his own enjoyment and his unconscious imitation. Thus his daily training is entirely directed toward one common end—a clear, forceful, and easy expression of his own or another's thoughts.

The course of study in English of the Bridgeport grammar grades

suggests at present, a commingling of these two ideals. Technical grammar as a distinct study is rigidly insisted upon. Promotion from grade to grade depends in many cases upon the pupil's knowledge of definitions, his ability to conjugate, parse, and analyze. Punctuation is considered as an independent study to be finished by the end of the fifth grade with reviews through the eighth. Spelling is taught from a book throughout the four years with the injunction that there be "One lesson each week made from other lessons." Instruction in composition, both written and oral, is given, but, as a subject, it is not considered as important as grammar. This is shown by the fact that it is assigned less time than technical grammar;* it does not affect materially the promotion of a child; and, after the fifth grade, it may be taught largely as the principal and teachers of a school see fit. Reading is required for half an hour daily in all grammar grades. In grades seven and eight, the classics suggested for study are, for the greater part, those which should interest the child and aid him in the development of his mode of expression.

To determine the effectiveness of the foregoing course of study, two examinations were given, one in the sixth grade (VI[2]); the other in the eighth. The former was to test the efficiency of the work midway between the point of greatest elimination of students and the end of the course; the latter to judge the work of those who had had advantages of the complete course.

In both of these examinations, each pupil was asked to write an original composition,[1] and a reproduction.[2]

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[1]In the sixth grade, he was asked to write upon one of the following subjects:

Stalled in a snow storm	A rainy day at camp
Making a snow fort	Why I am a scout
A circus parade	Caught in a thunder storm
Feeding the monkeys	

In the eighth grade, upon one of the following subjects:

Locked out!	An exciting bicycle ride
Dead broke!	The study I like best
An April fool joke	The games I like best
Main street on election night	A narrow escape from drowning
A daring feat	An encounter with an angry dog
An interesting vaudeville act	A winter evening at home
Lost in the woods	An amusing occurrence at school
My room after a hurried dressing	How to make a fire at camp

[2]In the sixth, he was required to reproduce Calvin C. Colton's "A Leap for Life."

In the eighth, he was required to reproduce an adaptation of Washington Irving's "The Adventure of My Aunt."

* Grammar is given 1½ hours a week; composition, only 1 hour.

The work of examining the sixth grade papers was entrusted to two English teachers, one a teacher of the grades, the other with both graded and high school experience. The eighth grade papers were criticised by a committee composed of the two teachers that had had charge of the sixth grade work, with the addition of another teacher of the grades, and two more high school English teachers. The same plan virtually was carried out in the examination of the two grades of work. On the first day, the committee worked together, in order to secure a uniform standard of criticism. It was decided that all papers should be judged from two points of view—originality of expression, and mechanical correctness. With this standard as a guide, the papers of a school were read with the idea of securing general impressions of the work of a class, rather than of individuals. To effect this plan, the compositions, while being read, were classified in five groups: In the first were the "exceptional" or A papers; in the second, the "strong" or B papers; in the third, the "average" or C papers; in the fourth, the "weak" or D papers; and in the fifth the "impossible" or E papers. Compositions placed in the fourth and fifth groups showed that the students had little or no power of self-expression.

In comparing the following results, it should constantly be borne in mind that the sixth grade, as far as Bridgeport is concerned, represents a more normal condition of what might be expected of public school training than the eighth. The former grade, broadly speaking, includes nearly every class of children that might hope to receive an efficient, practical training in English; the latter grade, a limited class, as it will be seen by reference to Table 2, (Distribution of Pupils by Ages and Grades) that there is loss of over fifty per cent in enrollment in the eighth, as compared with the sixth grade. The eighth grade pupils have had, moreover, the advantage of fairly prosperous surroundings, and a two-years' study of classics, easy of imitation. Another fact should be remembered: as there are no eighth grade classes in the Longfellow and Waltersville schools, where the majority of the foreign children are trained, the results of these schools are not included in the estimate of the work of the higher grade. This, very naturally, gives another advantage to the eighth grade results. A tabulated report of the results of the examinations follows. The figures refer to the combined results of the original compositions and reproductions.

Tables 1 and 2 give the general results of this examination. Both original compositions and reproductions are included in each table.

Results of the Examination in English.

TABLE 1

Sixth Grade

Classification	Number	Percentage of the Whole
A or exceptional papers	15	2.8
B or strong papers	96	18.2
C or average papers	225	42.7
D or weak papers	140	26.6
E or impossible papers	51	9.6
Total	527	99.9

TABLE 2

Eighth Grade

Classification	Number	Percentage of the whole
A or exceptional papers	26	4.
B or strong papers	197	30.2
C or average papers	315	48.2
D or weak papers	95	14.5
E or impossible papers	19	2.9
Total	652	99.8

Connecting the facts shown in these tables with the discussion of the relative emphasis placed upon the teaching of technical grammar as compared with composition, it is apparent that the present course is not producing satisfactory results. Taking first the figures of the table for the sixth grade, it is to be noted that over forty per cent. display only average ability, while over thirty-three and a third per cent. have failed to secure any practical results whatsoever. When it is realized that over fifty per cent. of the children never reach the eighth grade, that thirty and one-half per cent. leave at the end of the fourth grade, and thirty-one and eight-tenths per cent. at the end of the fifth, these figures become startling. A consideration of them, moreover, in their immediate bearing upon the examination shows that over one-third of these sixth grade children knew so little about the ordinary principles of composition that their papers were considered below a passing grade.

In reviewing the causes of these failures, the sixth grade papers will still be considered and, later, those of the eighth. An illogical arrangement of sentences (the frequent cause of poor paragraph structure) was the determining factor in the failure of 127 papers; weak sentence structure, of 117 papers; no knowledge of punctuation, of 38; and poor spelling, of 31.

What do these figures show? The study of technical grammar should, if it has any value at all, accomplish two things at least:—it should aid the students in the construction of their sentences, and should develop their logical faculty. Inasmuch as the greatest causes of failure in this grade were due to an inability to construct coherent sentences and arrange sentence units, it is evident that the constant drill upon the technical side of language has not produced

practical results for a large proportion of the pupils. The figures in punctuation, moreover, do not reveal the exact condition of affairs, as no papers were given a failing grade on the sole ground of lack of knowledge in this subject. The work in punctuation throughout the sixth grade was exceedingly weak. Spelling, however, except on the part of foreigners, showed considerable strength. The papers as a whole were neat, but the ink, in many cases, was so thin that the examining committee had difficulty in reading the papers. It is easy to foresee the inevitable effect this will have upon the eyesight of the children if better ink is not supplied.

Turning now to the subject of the general organization of material, the sixth grade papers indicated a very meagre training in reproducing the thoughts of others. As has been said elsewhere, this power can be gained in the geography, history, and science lessons, as well as in the composition classes. That it should be cultivated there can be no doubt. Reproduction work is of great assistance in training children to determine the relative value of ideas. It should give them judgment in deciding what is of importance, and what is not. It should aid them naturally, in an unconscious forming of their own power of self-expression, and, finally, it should be of great assistance in enlarging their vocabularies. The sixth grade papers showed that the children had had little training in this kind of composition work, for insignificant details were given the same importance as leading ideas. Moreover, the poem in many instances, was reproduced in a peculiar kind of prose which showed that the children were trying to reproduce the story in the poetic form of the original. The following table will show how much greater was the percentage of failures in reproduction work than in the writing of original compositions:

TABLE 3

Sixth Grade

Original Compositions

Classification of mark.	Number	Percentage
A	8	3.0
B	59	22.4
C	136	51.7
D	43	16.3
E	17	6.4
Total	263	99.8

Reproductions

Classification of mark.	Number	Percentage
A	7	2.6
B	37	14.0
C	89	33.8
D	97	36.7
E	34	12.8
Total	264	99.9

In the original work, the sixth grade children displayed considerable skill in story-telling. The subjects assigned were such as might naturally be expected to interest them. The exercise was given to test their powers of imagination, of observation, and of reasoning. Such an exercise should reveal, furthermore, their ability to plan, (i. e., power to select and arrange material with a given purpose in mind;) their individuality of expression and the extent of their vocabularies. The papers proved that the children had a good sense of the value of words. In many instances words and expression were selected, exceptionally well suited to express the ideas the pupils had in mind. In writing upon subjects like "A circus parade" or "Caught in a thunder storm" the compositions showed spontaneity and individuality. At the same time, however, many of these original narratives revealed a poor sense of proportion, and little ability to keep to one subject. The pupils had written apparently without outlining their stories ahead of time. Planning is a necessary preparation for all thought work and, if the pupils are ever to be trained to speak and write correctly, this essential form of composition study must always precede every oral and written exercise.

The results of the eighth grade examinations can be considered in a more general manner inasmuch as they affect, at present, the teaching of such a small percentage of the total school enrollment. By examining Table 1 again, it is seen that about two-sixths are doing strong or exceptional work, about three-sixths average or passing work and one-sixth weak or impossible work. Many of the weaknesses characteristic of the sixth grade work are apparently corrected by the time the children reach the eighth grade. The sentence structure is good, and the relating of sentences into fairly-well constructed paragraphs is rather remarkable for children of this age. The spelling, considering the amount of time given to the subject,[1] is not as good in this grade as might be expected. The children spelled the words dictated[2] to them better than those they used in their own compositions. But the real value of the study of spelling lies, it must be remembered, not in an ability to spell isolated words, but in an ability to spell words as they are needed to express related ideas. Punctuation here, as in the sixth grade, is very faulty. The children, judging from the directions given in the Course of Study, may know the rules, but, if they do, they rarely, if ever, apply them.

Leaving this technical side of composition work for a consideration of the manner of telling both the original stories and the reproductions, it is worthy of note that the students felt a keen interest in the subjects assigned. This interest is often manifested by the original and spontaneous way the children express themselves. In such compositions—and they are generally the original stories—

[1] It should be remembered that spelling has been taught for 15 minutes each day, for five days in a week, throughout the course.

[2] Fifty words were dictated, as a part of the examination.

mechanical difficulties seem to drop away, leaving the child free to express himself in an unconscious manner. But in the general organization of the eighth grade papers, the same weaknesses are apparent as in the sixth. Table 4 which follows shows that the reproduction work of this grade proved, as in the sixth, to be a more difficult exercise than the writing of an original composition.

TABLE 4

Eighth Grade

Original Compositions

Classification	Number	Percentage
A	13	4.0
B	115	35.0
C	152	46.3
D	41	12.5
E	7	2.1
Total	328	99.9

Reproductions

Classification	Number	Percentage
A	13	4.0
B	82	25.3
C	163	50.3
D	54	16.6
E	12	3.6
Total	324	99.8

The vocabulary of Irving, although in this story[1] it is by no means difficult, gave no end of trouble. The children, moreover, were often unable to see the point of the tale, and because of this they did not select and arrange their material in such a manner as to reproduce the story effectively and completely. The original compositions of this grade like those of the sixth, but to a less degree, show the same faulty sense of proportion and the same inability to keep to the subject. These difficulties, in both reproduction and original composition are largely matters of poor planning and should be corrected by requiring outlines to be made constantly for all oral and written work. This plan work would not only eradicate the faulty sense of proportion and the lack of judgment as to the relative value of details now generally characteristic of the written composition work, but it would also aid the oral composition work which is already being carried on most successfully in some Bridgeport schools. *

* In one eighth grade in which two exercises a week are regularly given to oral composition unusual results in the compositions were shown. Not a single paper in the original work of this school was considered below the passing grade.

[1] See note, page 86.

To sum up the work of the lower grades (Grades I-V) in language:

Findings:

1. "Language" is divided into a study of "capitals and marks" and "technical forms." Each is considered as a separate study. The work in punctuation is that which is usually found in elementary schools.

2. The course of study for teaching composition is very general and indefinite. It includes both oral and written expression with emphasis upon the latter.

3. Spelling is emphasized both as a separate subject and in correlation with all written work.

4. Reading is taught in a uniform manner throughout the system. The same texts are used in the schools composed of foreigners as in those attended by Americans. The method of teaching reading in all schools is, for the greater part, based upon a knowledge and use of phonetics. Objective teaching is thus neglected.

5. No requirement in reading and writing English is made of children desiring working certificates.

Recommendations. (Grades I-V)

1. Unify all teaching with English as a basis. Consider spelling, punctuation, grammar, and penmanship not as subjects per se but as aids to all written and oral expression. Teach geography, history, physiology, and nature work ("General Lessons") as a foundation for the expression of the thoughts and observations of the children. To do this, make all of this elementary work objective.

2. Emphasize oral composition. Train the children, especially in the science lessons, to talk in paragraph units. This is easy of accomplishment if the children work directly with the objects they are studying. Use this oral work as an immediate preparation for written composition. Have the children write daily at the board. Employ for this work pupil and teacher criticism of a constructive kind.

3. Give language lessons preparatory to reading. Depend less upon phonetics and more upon connecting the printed text with the thought to be conveyed by the reader.

4. To secure recommendations 1, 2, and 3, revise the course of study, making it definite and yet flexible. Appoint, as has been suggested elsewhere, a supervisor to assist the Superintendent. This supervisor, on account of her expert training, could give model lessons in composition in the various class rooms and she could also conduct teachers' meetings for the purpose of interpreting the course, discussing methods and assisting the teachers generally in keeping the work up to a high standard of efficiency.

5. Have teachers expressly trained for teaching foreigners, in charge of the classes in the Waltersville and Longfellow schools. Use in these schools, texts specially prepared for foreigners.

6. The Board of Education, since it has the power, should make the completion of at first, the fifth and, later, the sixth grade, the minimum requirement for a working certificate. During this period of change, it should make sure that children partially trained in the old country should receive particular training in English by means of specially prepared texts and at the hands of teachers interested in solving the immigrant problem.

To sum up the work of the grammar grades, in language:

Findings:

1. **Technical grammar** is rigidly insisted upon. In Bridgeport, this means a knowledge of definitions and the ability to conjugate, parse, and analyze. A pupil's proficiency in this respect determines his promotion from grade to grade so far as his language work is concerned. The method of teaching used, and the results obtained show that grammar is not taught as a means of self-expression. See Tables 1 and 2.

2. Punctuation is considered an independent study, to be finished by the end of the fifth grade, with reviews through the eighth. The papers show that the pupils have little, if any, working knowledge of this subject.

3. Spelling is taught four days in a week, throughout the course, from a book. This work is supplemented by one lesson each week made from other lessons.

4. Reading is taught daily, and, in the seventh and eighth grades, classics suited to children and easy of imitation are studied.

5. Composition, both oral and written, is taught, but is not given the same amount of emphasis as is technical grammar. Composition is given a half-hour twice a week; technical grammar, the same length of time, three times a week. After the fifth grade, composition may be taught as the principals and teachers see fit.

The results of the composition test show:

A. In the sixth grade, containing a fairly general representation of school children,
   (a) About 21% are doing strong or exceptional work;
   (b) Over 40% display only average ability;
   (c) Over 33⅓% have failed to secure any practical results;
   (d) The failures are due, in the majority of cases, to an illogical arrangement of ideas, and to weak sentence structure; in a few cases, to poor punctuation and spelling;

(e) Many papers fail to show any plan ability. In the original work, this destroys the proportion of the parts to the whole; in the reproduction work, the differentiation of the value of details to bring out effectively the author's purpose;

(f) The work in original composition, which is better than that in reproduction, shows a good sense of the value of words, spontaneity, and individuality of expression.

B. In the eighth grade, representing a limited class,

(a) 34% are doing exceptional or strong work;

(b) 48% are doing average work;

(c) 17% are failing.

(d) In the majority of cases in this grade, the failures are due to a poor selection of details; to a lack of proportion of the parts; in a word, to an inability to realize the relative importance of the various thoughts with which the pupils are dealing.

Although the sentence and paragraph structure is better in this grade than in the sixth, many failures are due to a lack of feeling for these divisions of thought. The spelling of this grade, considering the formal drills given in the subject, is weak. The punctuation in the papers shows gross ignorance of that subject.

(e) Children trained in oral composition write with ease and fluency. In one school where this kind of composition is emphasized, the results in the original work are exceptional.

Recommendations: (Grades VI-VIII)

1. Unify all teaching with English as a basis. Emphasize composition work, both oral and written. Teach technical grammar as an aid to composition. Give less attention to definitions; more to that kind of grammar which will help the children overcome obstacles to self-expression. Discontinue using a knowledge of technical grammar as a basis of promotion.

2. Teach punctuation daily, as the work of the children in composition, geography, history, physiology, shows the need. Develop and use rules in this way.

3. Teach spelling daily in all work. Select words from reading, written lessons, and from spellers which group troublesome words under rules. Develop the rules before giving the words. Use constantly all such new words.

4. Study classics suited to children as early as the sixth grade.

5. Outline in detail the course of study in composition for the use of teachers.

6. Increase the amount of time given to composition by decreasing the requirement in technical grammar.

7. Have children write often at the board. Continue to criticise constructively all pupil effort with a view to developing a feeling for the structure of the sentence and paragraph.

8. Reproduce constantly in all grammar grades fine units of literature. Before doing this work, make a careful plan of the selection. Write always from outlines. Study the choice of words made by the author before attempting the reproduction. Have some of this work oral, some written.

9. Write original compositions as often as possible in all grades. Plan every such composition before writing. Emphasize the relative value of ideas in this preliminary work. Have several children give their compositions orally, before the class writes. Use new subjects for each composition exercise, in order not to dull the interest of the pupils. Keep this work as far as possible close to the lives of the children.

XI.

REPORT ON THE MEASUREMENT OF THE WORK IN ARITHMETIC DONE BY PUPILS IN THE SCHOOLS OF BRIDGEPORT, CONN.

In estimating the efficiency of the work in arithmetic in the Bridgeport schools, the advanced division of the sixth grade was selected for the application of a standard test in fundamental operations and in reasoning which had previously been used in twenty-six other systems. In every room the tests were given personally by the outside examiners in accordance with the exact procedure followed elsewhere.

Bridgeport's results in the test in fundamentals were highest of all; in reasoning they were less favorable, though equal to the average attained by classes elsewhere.

It is not known how many pupils had been eliminated in each or any of these twenty-six other systems before reaching the grade in which the tests were applied. Any comparison of results in different school systems, to be complete, should take this factor into account, for obviously that system in which elimination has set in earliest and been most severe would have a decided advantage over a system which has held its retarded children through the grade tested, because in the former case only the brightest children would remain to be tested. Those tested would be a highly selected class. In Bridgeport, 51% of the pupils are eliminated before they reach the sixth grade (Table I.)

A detailed account of the test follows:

MEASUREMENT OF THE ARITHMETICAL ABILITIES OF THREE HUNDRED AND TWENTY PUPILS IN TEN CLASSES, SIXTH[2] GRADE (HIGH SIXTH), SCHOOLS OF BRIDGEPORT, CONN., BY RESULTS OBTAINED FROM THE STONE TEST.

The measurement of the arithmetical achievements of the schools of Bridgeport is based upon the work of all the pupils in the sixth[2] classes present at the time the tests were given, as follows:

School.	No. of pupils
1	17
3	51
5	35
6	45
10	37
14, Room 13	44
14, Room 14	34
17	37
18	7
19	13 = 320

In order that the comparison might be made upon a more equitable basis, the papers from schools Nos. 1, 18, and 19, were combined, thus forming a class of 37 pupils in place of three classes of the smaller numbers.

Before any scoring was done, each class was designated by a Roman numeral from I to VIII, inclusive; and it was determined to give the composite score of the city as a unit, 320 pupils, the designation "Bridgeport." These designations will identify the classes and the city throughout this entire study. It is thus seen that no significance can attach to the order in which these numerals are assigned. The order of achievement is shown by the serial order as arranged in each table, starting with the lowest at the top and advancing in order of achievement to the highest at the bottom of the table.

The test selected is that prepared by Dr. C. W. Stone, and used by him in measuring the arithmetical achievements of the following twenty-six school systems:

Batavia, New York.
Decatur, Illinois.
Elwood, Indiana.
Ethical Culture School, New York City.
Francis W. Parker School, Chicago.
Horace Mann School, Columbia University, New York City.
Indianapolis, Indiana.
Jersey City, New Jersey.
Kokomo, Indiana.
Linne School, Chicago.
Medford, Massachusetts.
Montclair, New Jersey.
Muncie, Indiana.
Natick, Massachusetts.
Observation School, State Normal, Providence, R. I.
Passaic, New Jersey.
Providence, R. I.
Rochester, New York.
Schools No. 40 and No. 50, Manhattan, New York City.
Speyer School, Columbia University.
Syracuse, New York.
Training School, State Normal, Hyannis, Massachusetts.
University Elementary School, University of Chicago.
Waltham, Massachusetts.
Waukegan, Illinois.
Yonkers, New York.

The test consists of two parts: First, a series of problems in fundamentals; and second, a series of problems in reasoning. The method by which these tests were selected, their purpose, content,

and scoring, are fully explained in Dr. Stone's "Arithmetical Abilities and Some Factors Determining Them," Columbia University, Contributions to Education, Teachers College, Series No. 19.

In formulating his tests Dr. Stone had the assistance of Professor Smith, and the content of each test was so organized as to present a definite purpose, accurately measurable. Each test was tried out with pupils to determine the most reasonable time limit as well as arrangement of problems. In Fundamentals the main purpose was the determination of the ability of pupils completing the sixth grade, in addition, subtraction, multiplication and division. The first six questions embodied all the difficulties of the four fundamental operations, but the test was made purposely too long (fourteen examples) for any except the brightest, most rapid pupil to finish in the twelve minute limit. This not only kept them from getting out of work but also provided means to measure their total ability, including rapidity. In Reasoning the main purpose was the determination of the ability of these children to reason in arithmetic. To this end the problems had been selected and arranged after careful trial with pupils in the classroom and were weighted according to the degree of difficulty experienced by the children in this preliminary study by Dr. Stone. Dr. Stone's weighting and arrangement have been accepted and used throughout this study upon his authority (c. f. Arithmetical Abilities, pages 10 and 18). This test also was made purposely so long that but very few of the most rapid children might be expected to complete it in the fifteen minute limit. In this also the first six problems embodied all the conditions deemed essential. Each of the two tests was printed separately, and each pupil was furnished with a copy. A sample of each test is appended hereto so as to show the exact form in which each went into the hands of the pupils.

ARITHMETIC TEST.

Work as many of these problems as you have time for; work them in order as numbered:

1. Add
   2375
   4052
   6354
   260
   5041
   1543
   ———
2. Multiply 3265 by 20
3. Divide 3328 by 64
4. Add
   596
   428
   94
   75
   302
   645
   984
   897
   ———
5. Multiply 768 by 604
6. Divide 1918962 by 543
7. Add
   4695
   872
   7948
   6786
   567
   858
   9447
   7499
   ———
8. Multiply 976 by 87
9. Divide 2782542 by 679
10. Multiply 5489 by 9876
11. Divide 5099941 by 749
12. Multiply 876 by 79
13. Divide 62693256 by 859
14. Multiply 96879 by 896

Solve as many of the following problems as you have time for; work them in order as numbered:

1. If you buy 2 tablets at 7 cents each and a book for 65 cents, how much change should you receive from a two-dollar bill?
2. John sold 4 Saturday Evening Posts at 5 cents each. He kept half the money and with the other half he bought Sunday papers at 2 cents each. How many did he buy?
3. If James had 4 times as much money as George, he would have $16. How much money has George?
4. How many pencils can you buy for 50 cents at the rate of 2 for 5 cents?
5. The uniforms for a baseball nine cost $2.50 each. The shoes cost $2 a pair. What was the total cost of uniforms and shoes for the nine?
6. In the school of a certain city there are 2,200 pupils; half are in primary grades; one-fourth in the grammar grades; one-eighth in the High School and the rest in the night school. How many pupils are in the night school?
7. If 3½ tons of coal cost $21, what will 5½ tons cost?
8. A news dealer bought some magazines for $1. He sold them for $1.20, gaining 5 cents on each magazine. How many magazines were there?
9. A girl spent one-eighth of her money for car fare, and three times as much for clothes. Half of what she had left was 80 cents. How much money did she have at first?
10. Two girls receive $2.10 for making buttonholes. One makes 42, the other 28. How shall they divide the money?
11. Mr. Brown paid one-third of the cost of a building; Mr. Johnson paid half the cost. Mr. Johnson received $500 more annual rent than Mr. Brown. How much did each receive?
12. A freight train left Albany for New York at 6 o'clock. An express left on the same track at 8 o'clock. It went at the rate of 40 miles an hour. At what time of day will it overtake the freight train if the freight train stops after it has gone 56 miles?

Exactly twelve minutes were allowed for the test in fundamentals, and fifteen minutes for the test in reasoning.

All papers were collected immediately and forwarded to Mr. Hebden by express on December 17, 1912. The scoring of all the papers was done entirely by him. The credits for each example are the same as those given by Dr. Stone. In fundamentals each step in the process of working each of the examples was given a score of one: For instance, in "Example 1" **Addition** received a score of four, being one for each column correctly added; in "Example 6" **Division** received a score of four, **Multiplication** a score of four, and

Subtraction a score of three, each step thus receiving its due credit. These illustrations will serve to make clear the following complete list of scores for the several problems, assuming all steps to be correctly worked:

1. Score of 4 in addition.
2. Score of 2 in multiplication.
3. Score of 2 in division, 2 in multiplication, 1 in subtraction.
4. Score of 3 in addition.
5. Score of 3 in multiplication, 2 in addition.
6. Score of 4 in division, 4 in multiplication, 3 in subtraction.
7. Score of 4 in addition.
8. Score of 2 in multiplication, 4 in addition.
9. Score of 4 in division, 4 in multiplication, 2 in subtraction.
10. Score of 4 in multiplication, 7 in addition.
11. Score of 4 in division, 4 in multiplication, 2 in subtraction.
12. Score of 2 in multiplication, 3 in addition.
13. Score of 5 in division, 5 in multiplication, 4 in subtraction.
14. Score of 3 in multiplication, 7 in addition.

The step incorrectly done lost the score for that step and counted a mistake instead. Where a mistake was made in copying the example, no deduction was made, but credit was allowed for the step worked correctly in accordance therewith. In **Reasoning** a score of 1 is given for each example where the reasoning is correct even though there are errors in the computation; where the reasoning is right in part, and in part wrong, a corresponding fractional credit is given, and the mistake is also counted. This method of scoring follows Dr. Stone's plan, not only making the comparison between cities upon the same basis, but also serving to make the credits stand definitely for that which they were intended to show. The weighting of the scores in Reasoning is that used also by Dr. Stone, as follows:

Problem 1, as weighted, gives credit of one score;
problem 2, one score;
problem 3, one score;
problem 4, one score;
problem 5, one score;
problem 6, one and four tenths scores;
problem 7, one and two tenths scores;
problem 8, one and six tenths scores;
problem 9, two scores;
problem 10, two scores;
problem 11, two scores;
problem 12, two scores.

The score for each class, and for the city as a unit, was reduced to the basis of one hundred, the number chosen by Dr. Stone as the basis of his scoring. To be more explicit, the actual score in fundamentals made by the thirty-six pupils in class VIII is 1458. This score multiplied by one hundred and divided by thirty-six gives 4050, the score representing this class in all the tables used.

The actual score in Fundamentals made by the three hundred and nineteen pupils in all the sixth[2] classes (one pupil, coming to school after the test in Fundamentals had been started, was allowed to take the test in Reasoning, thus making the difference of one in the two parts of the test) is 13,477. This reduced to the basis of one hundred pupils gives a score of 4,224.8, or 4225, the nearest integer. In this way the scores for steps attempted, mistakes, and steps accomplished, have been reduced throughout the study.

No attempt is made in this report to consider time expenditure in relation to achievements. The effects of the course of study and of supervision are noted only as they become factors in deductions and comparisons of the data given in tables.

After presenting in tables I(a), I(b), II(a), and II(b) (the scores achieved by the several classes in Reasoning and Fundamentals when all problems are counted and when only the first six problems are counted) the remaining tables are taken up in such a manner as to compare the achievements of Bridgeport as a system with the twenty-six systems of other cities. In the latter part of the study, brief notice is given to the achievements of the Bridgeport classes as compared with one another.

TABLES I^a and I^b

Showing the classes in order of achievement in Stone's test in REASONING, the scores made by the several classes and by the city as a whole (each reduced to the basis of 100), when all problems are counted (I^a), and when the first six problems only are counted (I^b).

TABLE I^a

Reasoning

First problems counted

Classes & City in order of achievement	Scores reduced to basis of 100
VIII	446.8
IV	496.4
VI	518
Bridgeport	**588.4**
V	609.2
I	637.3
III	638.9
VII	677.9
II	688.2

TABLE I^b

Reasoning

First six problems counted

Classes & City in order of achievement	Scores reduced to basis of 100
VIII	418.6
VI	460.7
IV	477.3
Bridgeport	**493.8**
VII	499.1
I	507.3
V	508.1
II	530.6
III	547.4

ACHIEVEMENTS OF CITIES AS SYSTEMS.

Comparison of Bridgeport with Other Systems.

For convenience of reference, the scores of the several classes, and of the city as a unit, have been arranged on the preceding page so as to show in table 1(a) the scores made in Reading, all problems being counted; and in 1(b), the scores in Reasoning where the first six problems are counted.

Tables II(a) and II(b) show similar scores made in Fundamentals. The tables have been thus organized and arranged not only for convenience of reference, but also for ready comparison between the amount of work done beyond the first six problems in Reasoning, and that done beyond the first six problems in Fundamentals. This is of interest and will have a bearing in the final deduction concerning each of these parts of the test. The lowest class, VIII, scored but 28 credits beyond the first six problems in Reasoning. The highest class increased its score by 141. In Fundamentals the lowest class, IV, achieved 1046 after the first six problems; the highest class, 2045. The greater facility in Fundamentals over Reasoning is thus clearly demonstrated.

TABLES II[a] and II[b]

Showing the classes in order of achievement in Stone's test in FUNDAMENTALS, the scores made by the several classes and by the city as a whole (each reduced to the basis of 100), when all problems are counted (II[a]), and when the first six problems only are counted (II[b]).

TABLE II[a]

Fundamentals
All problems counted

Classes & City in order of achievement	Scores reduced to basis of 100
IV	3862.3
VI	3963.6
VIII	4050.
II	4109.8
V	4121.6
Bridgeport	**4224.8**
III	4231.6
I	4691.9
VII	4997.

TABLE II[b]

Fundamentals
First six problems counted

Classes & City in order of achievement	Scores reduced to basis of 100
II	2637.3
IV	2815.6
Bridgeport	**2834.8**
VII	2838.2
V	2848.7
VI	2879.5
I	2881.2
VIII	2905.5
III	2951.5

Tables III and IV show the place of Bridgeport in serial rank as compared with the other cities in Reasoning and in Fundamentals, respectively, all problems being counted. From Table III, Reasoning, it is seen that Bridgeport ranks fifteenth, counting from the lowest

city, being two orders above the median of the other cities. By median is meant the number, or score, below which and above which there are an equal number of systems.

In Fundamentals (Table IV), Bridgeport is found occupying the highest rank of all, a gain of twelve places in serial order. These comparisons indicate that in Reasoning the Bridgeport schools manifest a fair degree of ability, while in Fundamentals, a much higher degree of excellence of achievement is attained. The gain of twelve places in rank in Fundamentals over Reasoning shows a much greater ability in the more formal work in arithmetic. To what extent accuracy and rapidity enter into this standing will be noted later in studying the tables showing accuracy and speed.

Figure 1 presents a graphic illustration of Table III. The numbers in the column at the left of the figure indicate scores made by the several cities. Each column shows quantitatively the amount of work

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TABLES III and IV

Showing the relative position of Bridgeport, Conn., compared with twenty-six other cities, in order of achievement, as measured by the scores made in Stone's test, all problems counted.

TABLE III—Reasoning

Cities in order of achievement	Scores reduced to basis of 100
XXIII	356
XXIV	429
XVII	444
IV	464
XXV	464
XXII	468
XVI	469
XX	491
XVIII	509
XV	532
III	533
VIII	538
VI	550
Median	551
I	552
Bridgeport	**588**
X	601
II	615
XXI	627
XIII	636
XIV	661
IX	691
VII	734
XII	736
XI	759
XXVI	791
XIX	848
V	914

TABLE IV—Fundamentals

Cities in order of achievement	Scores reduced to basis of 100
XXIII	1841
XXV	2167
XX	2168
XXII	2311
VIII	2747
X	2749
XV	2779
III	2845
I	2935
XXI	2951
II	2958
XVII	3042
XIII	3049
Median	3111
VI	3173
XI	3261
IX	3404
XII	3410
XXIV	3513
XIV	3561
IV	3563
V	3569
XXVI	3682
XVI	3707
XVIII	3758
VII	3782
XIX	4099
Bridgeport	**4225**

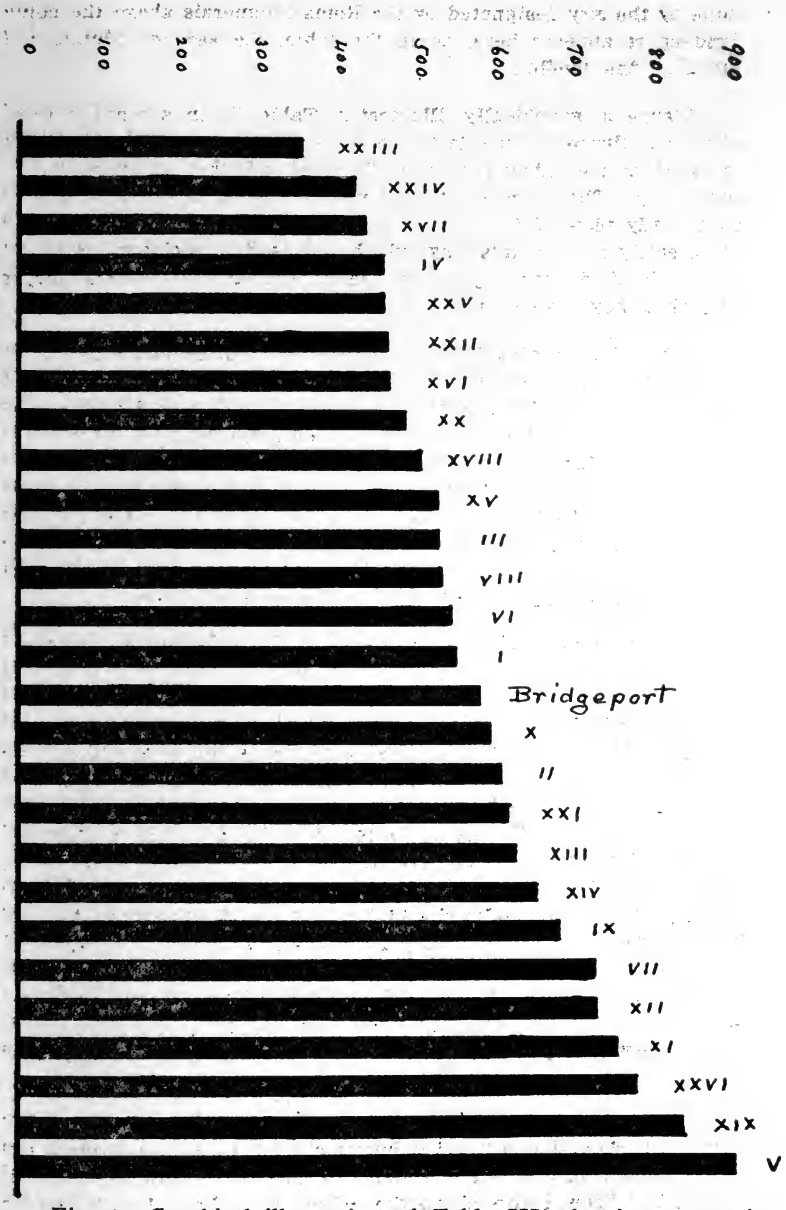

Fig. 1.—Graphical illustration of Table III, showing scores in REASONING made by the pupils in 6^2 classes of the schools in Bridgeport, Conn., and in twenty-six other cities, ALL PROBLEMS being counted.

done by the city designated by the Roman numerals above the column. Bridgeport appears here, as in the table, the second column to the right of the median.

Figure 2 graphically illustrates Table IV in a manner exactly similar to figure 1. In this figure, the column representing Bridgeport is found at the extreme right and reaching higher in place than any other city. These graphs, with the others to follow, lend themselves to a ready view of the entire field of comparison, and contrasts are more easily seen in this way, which will lead to a closer examination of the detailed scores given in the tables. It is for such purposes only that they have been made a part of this report.

Table V separates the scores in fundamentals made by the several cities so as to show the achievements in each of the four different operations, addition, subtraction, multiplication, and division. Occupying as it does the highest serial place, we must look for Bridgeport in a similar position under each of these heads. The table shows that Bridgeport ranks highest in addition and multiplication. It ranks next to the highest city in subtraction and division. This is consistent with the place occupied in the general score, and, further, it shows that the Bridgeport schools maintain an almost even level in the high place of achievement in each of these formal operations.

Tables VI and VII show the scores of the Bridgeport schools in Reasoning and in Fundamentals, but include the scores of the first six problems only. In Table VI, we find Bridgeport occupying almost the same relative position as when all problems were counted. In this table it occupies the fourteenth place in rank from the lowest. In table III it held fifteenth rank, thus showing by the gain of one place in rank when all problems are counted that it had maintained about the same ability in achievement without any loss of rapidity in doing the work. Here again, the work measures fair in comparison with other cities. In Fundamentals, (Table VII), however, Bridgeport again occupies the highest rank and gains one place over its own position in Reasoning as compared with the difference in rank when all problems were counted. That Bridgeport occupies almost exactly the same positions in these two tables as it did in Tables III and IV, emphasizes the difference in ability between Reasoning and the simple fundamental operations noted under the previous tables.

Figure 3 has been drawn to illustrate Table VI. The scores are again placed at the left and columns similarly used to represent the achievements of the several cities. In this table, however, a line of dashes has been drawn above the columns to show the highest possible score attainable when the first six problems only are counted. As the number of pupils who failed to attempt the first six problems are so few as to be almost negligible, the space between the top of each column and the line of highest score will approximately illus-

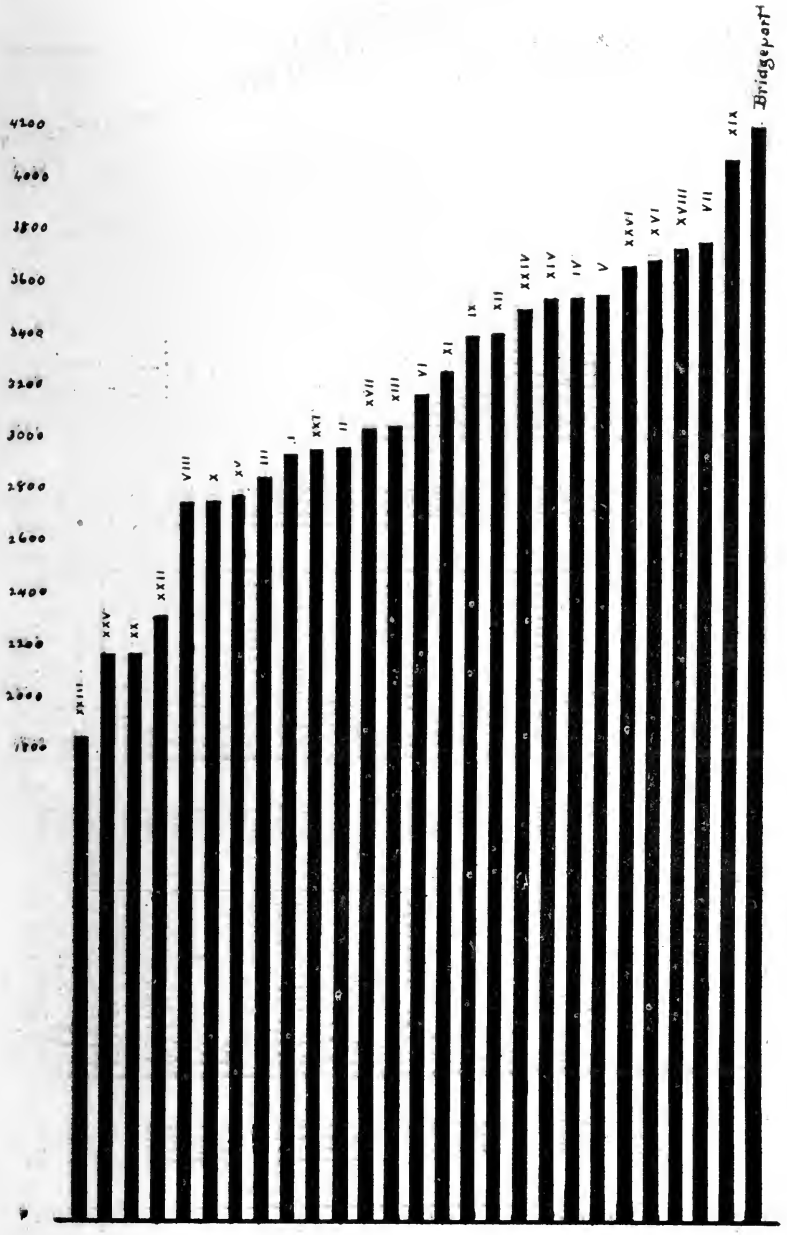

Fig. 2.—Graphical illustration of Table IV, showing scores in FUNDAMENTALS made by the pupils in 6^2 classes of the schools in Bridgeport, Conn., and in twenty-six other cities, ALL PROBLEMS being counted.

TABLE V

Showing the relative position of Bridgeport, Conn., compared with twenty-six other cities, in the order of achievement as measured by the scores made in each of the fundamental operations.

Addition		Subtraction		Multiplication		Division	
City	Score 100 basis	City	Score 100 basis	City	Score 100 basis	City	Score 100 basis
XX	771	XXIII	159	XXIII	641	XXIII	241
XXIII	800	XX	216	XXV	744	XXV	350
XXII	842	XXV	217	XX	763	XXII	408
XXV	856	XXII	235	XXII	826	XX	418
XXI	971	VIII	293	XXI	883	X	450
VIII	997	X	298	VIII	970	VIII	487
X	1004	III	299	XV	982	XV	490
XV	1005	XV	302	III	988	III	495
III	1063	XVII	310	X	997	II	516
I	1063	II	315	II	1037	XVII	516
XIII	1077	I	317	I	1039	I	516
II	1090	VI	337	XVII	1045	XIII	547
VI	1164	XXI	343	XIII	1061	VI	558
XI	1171	XI	360	VI	1113	XI	577
XVII	1171	XIII	364	XI	1153	XIV	605
IX	1182	XII	377	XIV	1189	IX	629
XII	1201	XXIV	377	XII	1201	XII	631
XIV	1220	IX	387	IX	1203	XXIV	644
XXIV	1254	IV	392	XXIV	1238	IV	646
V	1267	XVI	406	V	1239	V	656
XVI	1279	V	407	IV	1240	XXVI	674
XVIII	1280	XXVI	409	XXVI	1302	VII	695
IV	1283	XVIII	420	VII	1312	XVI	700
XXVI	1292	VII	426	XVI	1322	XVIII	710
VII	1346	XIX	476	XVIII	1347	XXI	754
XIX	1376	**Bridgeport**	**482**	XIX	1433	**Bridgeport**	**790**
Bridgeport	**1458**	XIV	547	**Bridgeport**	**1495**	XIX	814

TABLES VI and VII

Showing the relative position of Bridgeport, Conn., compared with twenty-six other cities, in order of achievement, as measured by the scores for the first six problems only.

TABLE VI—Reasoning

Cities in order of achievement	Scores reduced to basis of 100
XXIII	342
XVII	389
XVI	389
XXIV	396
IV	420
XXII	423
XX	426
XXV	438
III	445
XVIII	452
VI	455
I	466
VIII	468
Median	483
Bridgeport	**494**
XIII	497
X	502
IX	503
XV	508
XIV	514
II	516
XXI	532
XII	536
V	549
XIX	564
XXVI	569
XI	576
VII	661

TABLE VII—Fundamentals

Cities in order of achievement	Scores reduced to basis of 100
XXIII	1776
XXV	2078
XX	2084
XXII	2116
X	2383
XVII	2416
I	2456
XV	2494
III	2495
VIII	2501
XXI	2548
II	2554
VI	2565
Median	2578
XIII	2590
IX	2650
IV	2694
XVIII	2703
XI	2706
XXVI	2710
XII	2713
XIV	2717
XVI	2728
V	2767
VII	2782
XIX	2791
XXIV	2815
Bridgeport	**2835**

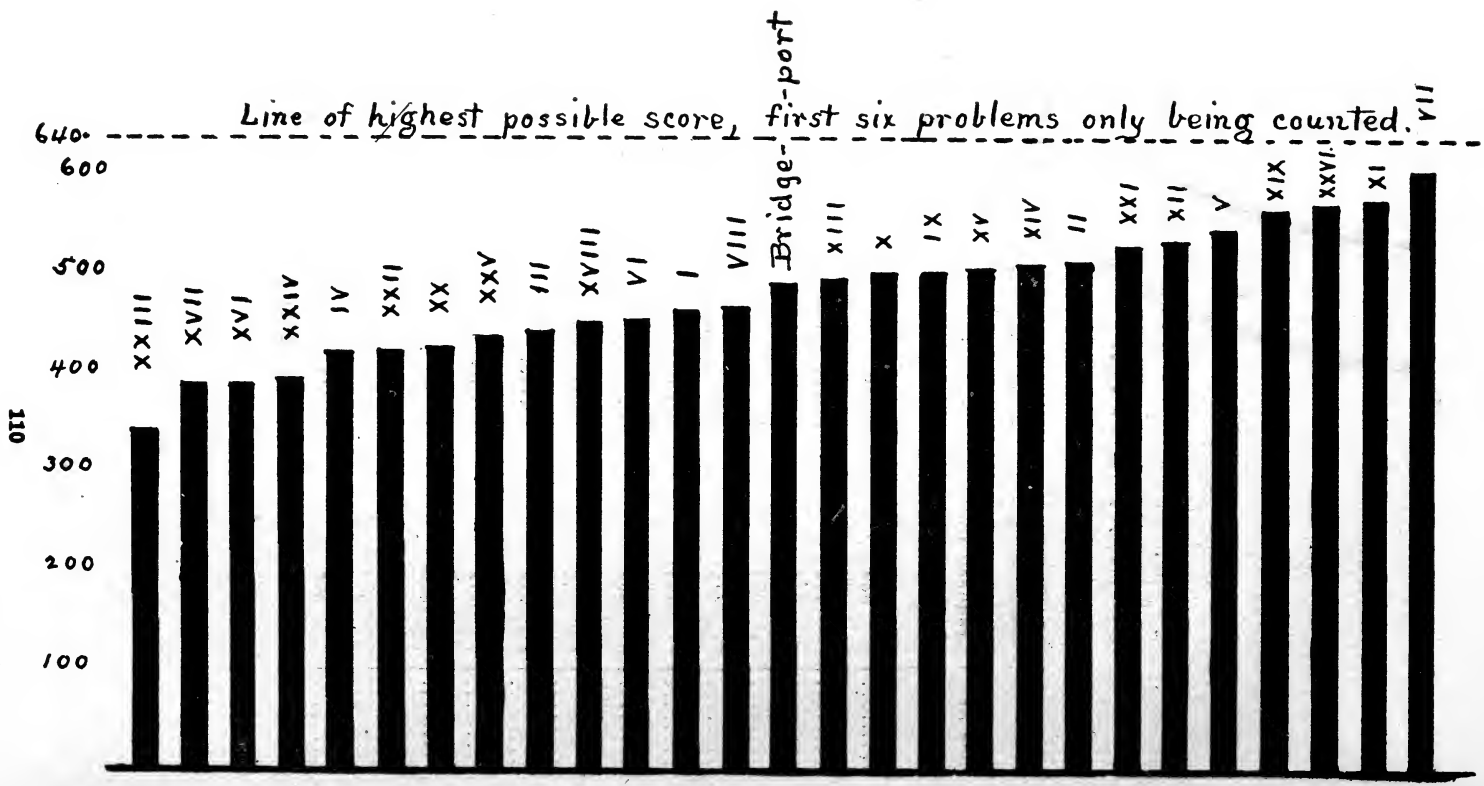

Fig. 3.—Graphical illustration of Table VI, showing scores in REASONING made by the pupils in 6^2 classes of the schools in Bridgeport, Conn., and in twenty-six other cities, only the FIRST SIX PROBLEMS being counted.

trate the amount of inaccuracy in this part of the work. In this graph Bridgeport itself becomes the median of the twenty-seven cities here represented.

Figure 4 similarly illustrates Table VII when only the first six problems in fundamentals are counted. The column representing Bridgeport is again at the extreme right, extending above the others. The line of highest possible score for the six problems is again placed above the several columns, and will serve similarly to show approximately the amount of accuracy.

Since these four columns have been constructed on the basis of the actual scores made rather than on the per cent of work done upon equivalent basis, the height of the columns must not be understood to show the amount of work done in Fundamentals as in any way compared with the amount of work done in Reasoning. Such a comparison is made in presenting the next tables and the graphs representing them, in order that the accuracy in working Fundamentals and the simple problems in Reasoning may be more positively compared.

Tables VIII and IX are intended to show measures of accuracy in arithmetic work. Table VIII presents definitely the number of problems in Reasoning attempted and the number of mistakes in reasoning, not in computation. The rate per cent. of this number of mistakes is based upon the total number of problems attempted by each system. In this table it is shown that Bridgeport occupies a higher rank in accuracy than it attained in achievement, being twenty-second above the lowest here; whereas, it was fifteenth above the lowest in order of achievement. This does not indicate that the rank in achievement has been lowered because of any great amount of inaccuracy; probably the contrary is the case.

In table IX, inaccuracy is measured by the number of mistakes made in the problems calling for addition only, problems 1, 4, and 7. Dr. Stone has shown in his Arithmetical Abilities, page 29, why he considers * * * "addition to be the best of the four fundamental operations to serve as a measure of accuracy in the more formal phases of arithmetic." In Table IX, a considerable change is noted in the rank of Bridgeport from that which it occupied in the table of achievement in Fundamentals. Here it occupies the sixteenth place from the lowest, eleven places below the highest rank, its position in order of achievement. This is a factor which will be considered in finally estimating the relative abilities shown by the pupils in the Bridgeport schools, all things being considered.

Figures 5 and 6 are drawn to illustrate graphically the rates per cent. of mistakes set forth in the two tables just discussed. In these graphs, however, it is entirely proper to make an immediate comparison based upon the height of the columns. The figures at the left of the columns are rates per cent. intended to aid in showing the per cent. of mistakes indicated by each column. Again, each of

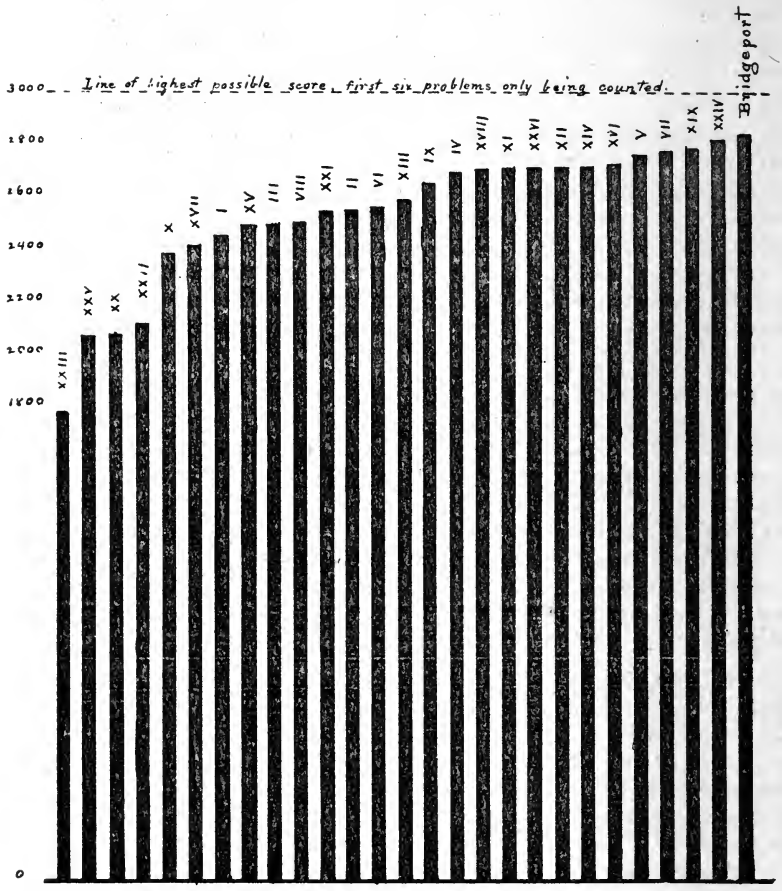

Fig. 4.—Graphical illustration of Table VII, showing scores in FUNDAMENTALS made by the pupils in 6^2 classes of the schools in Bridgeport, Conn., and in twenty-six other cities, only the FIRST SIX PROBLEMS being counted.

TABLE VIII

Mistakes in Reasoning

Cities in order of % of mistakes	Per cent. incorrect	Number of problems incorrect	Number of problems attempted
XVI	45.1	359	796
XVII	44.9	335	746
XXIII	41.1	238	579
III	36.7	282	769
I	34.7	269	776
XV	33.7	249	739
VI	31.8	233	733
XXII	30.9	196	634
X	29.7	232	781
XXIV	28.9	167	577
XIII	28.8	230	799
XXVI	28.6	276	964
VIII	27.9	192	689
XVIII	27.	175	648
XIX	26.4	255	965
XXV	25.3	150	592
IV	25.1	147	585
XX	23.4	139	595
VII	23.1	189	819
XIV	22.9	175	765
XII	22.3	185	831
Bridgeport	**22.**	**149**	**678**
IX	20.3	161	794
II	19.7	137	696
V	18.6	171	919
XXI	15.7	106	674
XI	14.4	112	776

TABLE IX

Mistakes in Addition*

Cities in order of % of mistakes	Per cent. incorrect	Number of steps incorrect	Number of steps attempted
XXII	30.9	196	634
XX	23.4	139	595
I	13.4	115	861
XVII	10.5	96	918
XVIII	10.4	102	982
VI	10.1	92	908
X	9.9	81	819
IX	9.6	86	898
V	9.2	89	967
XIII	8.9	75	847
XV	8.8	72	818
VII	8.76	87	993
IV	8.5	81	951
XXV	8.3	61	739
XXIII	8.	56	703
Bridgeport	**7.6**	**76**	**996**
VIII	7.5	60	803
XVI	7.04	67	952
II	7.	60	857
III	6.5	55	843
XII	6.3	56	896
XIV	6.2	57	921
XXIV	5.9	54	918
XXVI	5.8	54	930
XIX	5.78	57	987
XXI	5.1	44	860
XI	4.7	42	888

*Following Dr. Stone, the mistakes of the addition problems **only** (problems 1, 4, and 7) are used as the measure for accuracy in fundamentals.

TABLES VIII and IX

Showing the relative position of Bridgeport, Conn., compared with twenty-six other cities in order of achievement as measured by mistakes made.

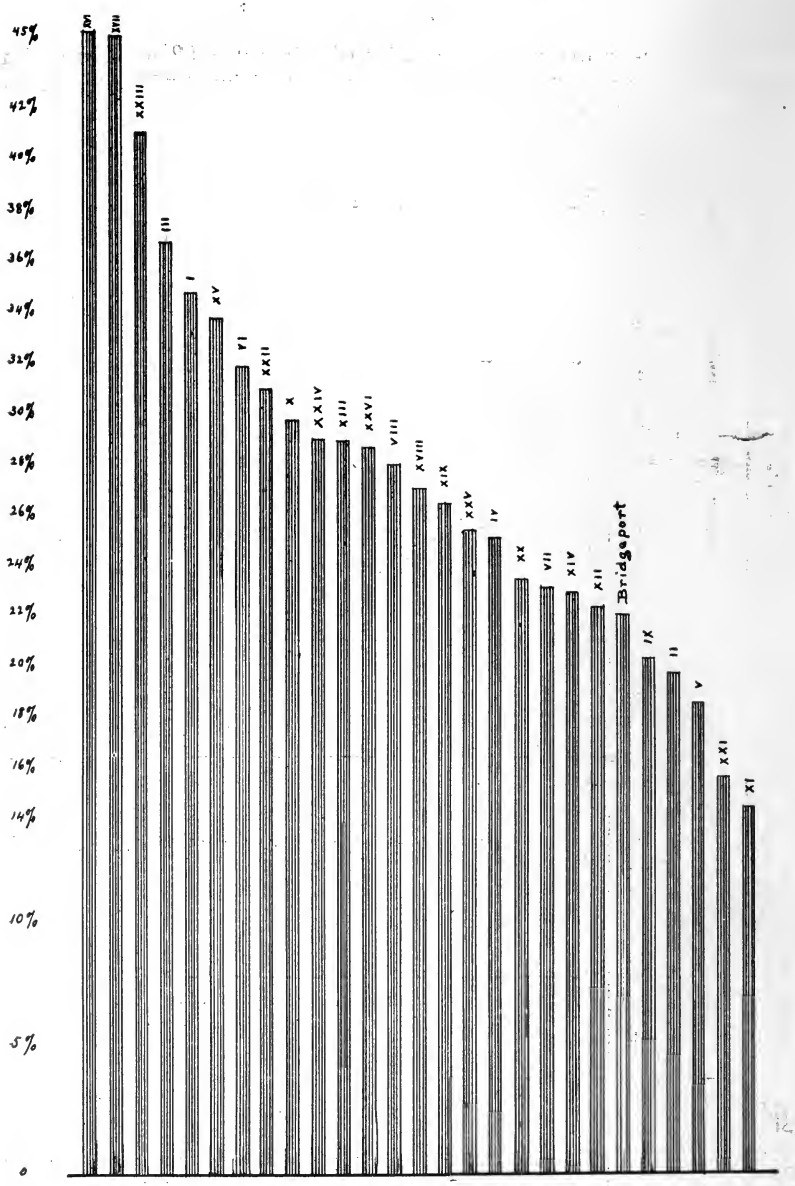

Fig. 5.—Graphical illustration of Table VIII, showing the relative position of Bridgeport, Conn., compared with twenty-six other cities, when measured by per cent. of MISTAKES made in REASONING, all problems being counted.

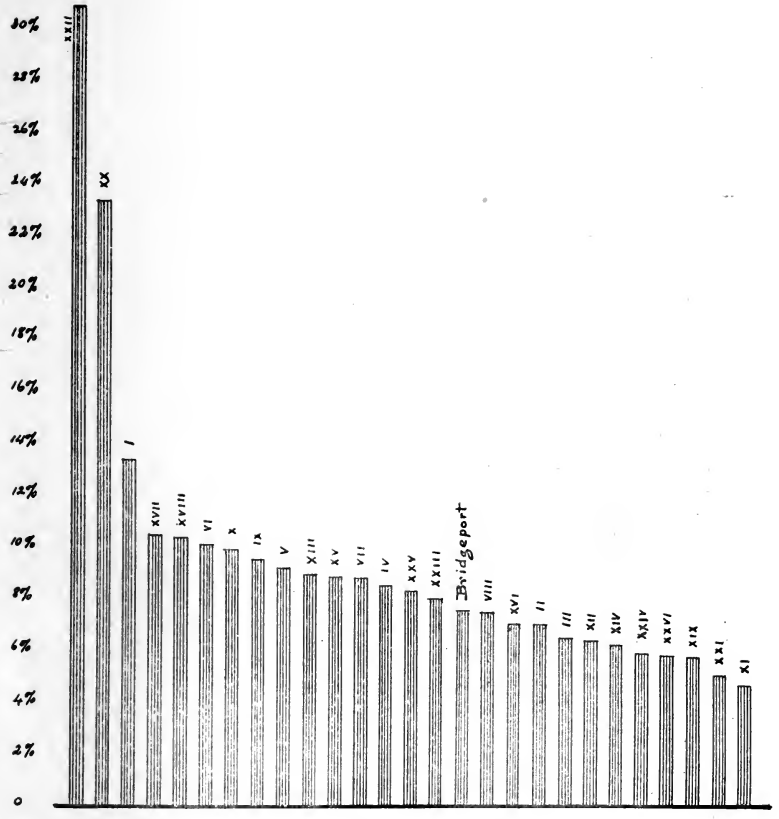

Fig. 6.—Graphical illustration of Table IX, showing the relative position of Bridgeport, Conn., compared with twenty-six other cities in order of accuracy of achievement measured by per cent of MISTAKES MADE IN ADDITION, problems 1, 4, 7 being counted.

TABLE X

Showing relative standings in arithmetical abilities and in accuracy, of Bridgeport compared with twenty-six other city systems of schools—averages ranking in serial order, 1—lowest, 2—next higher, and so on.

SYSTEMS	Abilities			Accuracy	
	Average serial standing	Serial standing in Reasoning (Table III)	Serial standing in Fundamentals (Table IV)	Serial standing in Reasoning (Table VIII)	Serial standing in Fundamentals (Table IX)
XXIII	1	1	1	3	15
XXV	3	4	2	16	14
XXII	4.5	5	4	8	1
XX	5	7	3	18	2
XVII	7.5	3	12	2	4
VIII	8	11	5	13	17
XV	8	9	7	6	11
III	9	10	8	4	20
XXIV	10	2	18	10	23
X	10	14	6	9	7
I	11	13	9	5	3
IV	12	4	20	17	13
II	13.5	16	11	24	19
XXI	13.5	17	10	26	26
VI	13.5	13	14	7	6
XVI	15	7	23	1	18
XIII	16	19	13	11	10
XVIII	16.5	9	24	14	5
IX	18.5	21	16	23	8
XI	19.5	24	15	27	27
XIV	19.5	20	19	20	22
XII	20	23	17	21	21
Bridgeport	**21**	**15**	**27**	**22**	**16**
XXVI	23.5	25	22	12	24
VII	23.5	22	25	19	12
V	24	27	21	25	9
XIX	26	26	26	15	25

the columns represents the city designated by the Roman numeral placed above it. The great difference in accuracy in working Reasoning problems and simple Fundamentals becomes evident at once upon comparing the two graphs.

Table X brings together the serial standing of all the cities in Fundamentals and in Reasoning from which the rank by average of abilities is obtained. Bridgeport is found ranking twenty-third, counting from the lowest, or fifth, counting from the highest rank. The average of abilities which determines the place in serial standing is obtained by dividing the sum of the numbers, indicating the serial order by the scores made in Reasoning and by scores made in Fundamentals, by two. For purposes of comparison, the serial standings in accuracy have also been brought together in this table, but they have not been used in computing the average of abilities. It is seen from the foregoing that the arithmetical abilities of the children in the Bridgeport schools stand well up toward the highest. Before deducing a final estimate it will be well to study some of the factors entering into the average attained.

First, to what extent has accuracy been a factor in determining the place of Bridgeport among other cities? It will be noticed that Bridgeport ranks fifteen from the lowest in Reasoning. In accuracy it occupies the twenty-second place above the lowest. This indicates clearly, as hereinbefore stated, that the relatively lower position occupied in Reasoning is not chargeable to inaccuracy since it has gained seven places in accuracy over the place made in Reasoning. As far as this point is concerned then, other factors must be studied to explain what is evidently a lower order of ability in Reasoning than in Fundamentals.

In Fundamentals, Bridgeport occupies the highest rank in achievement among all the cities. In contrast with the gain in serial position in Reasoning, there has been a loss of eleven places in the rank attained in accuracy. This shows the greater ability in the fundamental operations, notwithstanding the relatively lower position in accuracy.

Another point that must be considered is the facility or rapidity shown in the work and its effect upon the final standing of the city. Tables XI and XII have been compiled for this purpose.

Table XI, Reasoning, compares the scores made in all problems with the scores made in the first six problems by Bridgeport, by the median city, and by the highest city in rank according to Table X. In comparing Bridgeport with the median city, it is seen that Bridgeport scores less by 39, all problems counted. In the first six problems the deficiency was 38, making a loss of but one after the first six problems. This additional loss is too small to indicate any lower degree of facility or rapidity than was possessed by the median city. In comparing Bridgeport with the highest city, it is seen that Bridgeport is 70 scores lower for the first six problems and 260 below when

TABLES XI and XII

Showing rapidity or slowness by the higher or the lower scores made in **Reasoning** and in **Fundamentals** when all problems are counted; also by the gain or the loss in excess of scores for all problems over the excess when first six problems are counted, the scores made by Bridgeport being compared with the corresponding scores made by the median city (XXI) and the highest city (XIX) in serial rank of average abilities given in TABLE X.

+ = excess or gain, — = deficiency or loss.

TABLE XI—Reasoning

	Scores all problems	Scores first six problems	Excess all over six	Gain + or loss— in excess by Bridgep't
Bridgeport	**588**	**494**	**+ 94**	
Median city ...	627	532	+ 95	
Excess or def.	—39	—38	=	— 1
Bridgeport	**588**	**494**	**+ 94**	
Highest city ...	848	564	+284	
Excess or def.	—260	—70	=	— 190

TABLE XII—Fundamentals

	Scores all problems	Scores first six problems	Excess all over six	Gain + or loss— in excess by Bridgep't
Bridgeport	**4225**	**2835**	**+1390**	
Median city ...	2951	2548	+ 403	
Excess or def.	+1274	+287	=	+ 987
Bridgeport	**4225**	**2835**	**+1390**	
Highest city ...	4099	2791	+1308	
Excess or def.	+126	+ 44	=	+ 82

all problems were counted. In other words, Bridgeport made a "loss in excess" of 190 scores over the deficiency in the scores for the first six problems. This indicates that Bridgeport pupils have been able to do less work than the highest city in the same time, and that the lower ability shown in Reasoning has not been caused by over-speeding.

Table XII makes a similar comparison with regard to Fundamentals. In comparison with the median city, Bridgeport makes a gain in excess of 987 credits over the excess shown in the first six problems. Here Bridgeport has not only attained a higher score for the first six problems, but has also increased that gain by 700 points after the first six, clearly indicating a much higher degree of facility and rapidity in doing this part of the work. In comparison with the highest city, Bridgeport still shows greater speed, though not to so great an extent, the gain in excess here being 82. When it is remembered that in Reasoning, the Bridgeport schools ranked higher in accuracy than in the score of achievement, and that they have not been over-speedy, it is indicated clearly that these two factors have not tended to lower the relative rank in Reasoning. Again, it is noted that the rank in Fundamentals is not only held for the first six problems, but is more firmly fixed when all problems are considered; that there is a gain in rapidity, while at the same time, there is a lowered rank in accuracy. The deduction is that both facility and accuracy have been forces in determining the rank, but that gain by facility has been so much greater than the loss of accuracy as to have more than overbalanced its opposing effect.

Figure 7 presents in charted form all of these results and deductions. The serial order of the twenty-seven cities is noted in the numbers at the left. The charting presents the various changes in standings for Bridgeport, for the city ranking lowest, for the median city, and for the city ranking highest. The heavy solid lines represent Bridgeport. The dot and dash lines represent the other cities. The chart shows the relative rank of Bridgeport and of the cities just mentioned in Reasoning and in Fundamentals, and contrasts the rank attained in Reasoning with the rank in Fundamentals. That Bridgeport falls below the median city in Reasoning while it ranks so much above the others in Fundamentals, that over-speeding and inaccuracy cannot be chargeable as the cause, and that the more formal part of the work, Fundamentals, attains the higher rank, with rapidity overbalancing the greater relative degree of inaccuracy, these conditions make it necessary to inquire to what extent the course of study, its interpretation and use, and supervision may possibly affect the results obtained.

An examination of the course of study in arithmetic shows that the topics are definite and clear, that the order of topics conforms to that found in most other cities, and that there are ample suggestions intended to be helpful to the teacher. In some respects, the char-

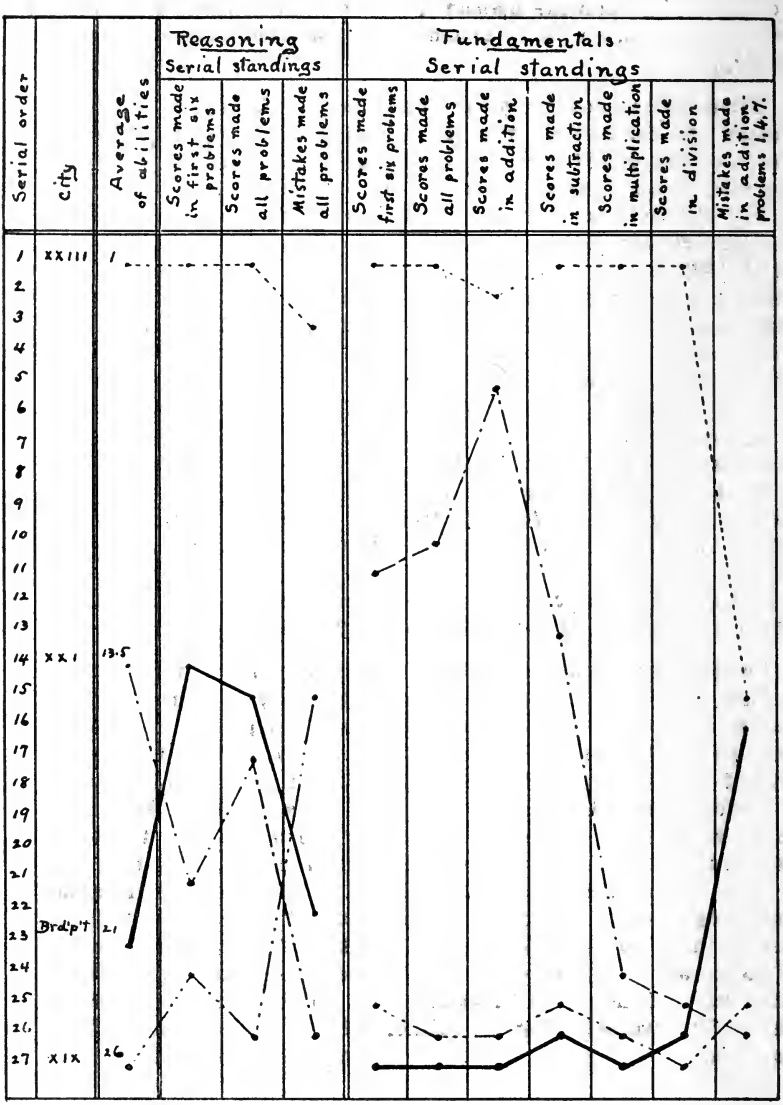

Fig. 7.—Chart showing the rank of Bridgeport, of the highest, of the lowest, and of the median city (Table X) in each of the several serial standings; the upward and the downward changes in rank; the comparison of city with city; and the contrast of standings in reasoning with those in fundamentals.

acter of these suggestions may be considered as the cause for the emphasis put upon the more formal side of the work. An illustration of this is found on page 36 under "Intelligent Statement." The suggestions here are so definite and precise that they take on the character of being prescribed rather than suggested. This may, and doubtless does, in part, account for the teachers' insisting upon form in the solution of simple concrete problems to so great an extent as to interfere materially with the freedom of the child in working out his own thoughts. One does not suppose that this is the intention of the course. It has been shown by a number of investigators that the course of study in itself is not a very potent factor in the result produced; but that the interpretation and the use of the course of study is of the greatest moment. Where the interpretation is not what it was intended to be, and where the use does not follow the expectation, it would indicate that there is need for a somewhat closer supervision.

This study of the arithmetic work of the Bridgeport schools, therefore, leads to the deduction that the work in arithmetic is of a high order, that greater emphasis is placed upon the more formal part of the work, that in Reasoning the work is of a fair order, that the course of study probably emphasizes the formal, and that closer supervision would tend to overcome any misapprehension with regard to what the course of study intended the practice to be.

ACHIEVEMENT OF CLASSES AS CLASSES.

It was thought that it might be of interest to present briefly the scores of the classes as such in comparison with the score of the city as a whole. Table XIII gives the score in Reasoning for each class, the number of problems attempted, the score achieved, the number of mistakes made, and the per cent. of inaccuracy.

Table XIV presents the same points for Fundamentals. The number of classes is so much smaller than the number of systems that no attempt will be made to compare the amount of deviation between the classes with the amount of deviation between the highest and lowest city systems. It will be noted in Table XIII that class V occupies the median position. The score is 609. The difference between the scores of the lowest class, VIII, and the highest class, II, is 241, which is 39.6% deviation from the median class, making the same comparison in Fundamentals, the difference between the highest and lowest scores is 1135, which is just 27.5% deviation from the median score of 4122. These rates of deviation are, of course, much less than that found between the highest and lowest of the twenty-six city systems in the previous part of the study; but here, again, we note that the deviation in Reasoning is over 12% more than the deviation in Fundamentals. This is another way of showing that even within the classes themselves greater ability is developed in form and method than in the concrete process of Reasoning.

ACHIEVEMENT OF THE CLASSES AS CLASSES

TABLES XIII and XIV

Comparison of the various scores made by the Bridgeport classes and the city as a whole in **Reasoning** and in **Fundamentals**, all problems being counted and scores reduced to basis of 100.

Class	REASONING				FUNDAMENTALS				
	No. problems attempted	Score (to nearest integer)	No. Mistakes	Per Cent. of Mistakes on No. attempted	Class	No. of steps attempted	Score (steps correct)	No. Mistakes (steps incorrect)	Per Cent. of Mistakes on No. attempted
VIII	554	447	122	21.9	IV	4007	3862	145	3.6
IV	576	496	84	14.6	VI	4141	3964	177	4.3
VI	616	518	141	22.9	VIII	4153	4050	103	2.5
Bridgep't	**673**	**533**	**149**	**22.**	II	4349	4110	239	5.5
V	760	609	232	30.5	V	4303	4122	181	4.2
I	722	637	184	25.5	**Bridgep't**	**4402**	**4225**	**177**	**4.**
III	674	639	67	10.	III	4329	4232	97	2.2
VII	785	678	218	27.8	I	4884	4692	192	3.9
II	753	688	159	21.1	VII	5265	4997	268	5.1

Table XV has been added to show the ranking order of the several classes by an average of their abilities. To anyone knowing the kind of pupils, their home environment, age, and time at school, this table will form an interesting study.

TABLE XV

Relative serial standing of classes and the city as a whole, based upon average ranking in abilities as shown in Tables XIII and XIV.

Class	Average of abilities	Serial Standing	
		Reasoning (Table XIII)	Fundamentals (Table XIV)
IV	1.5	2	1
VIII	2	1	3
VI	2.5	3	2
Bridge'pt	5.	4	6
V	5.	5	5
II	6.5	9	4
I	7	6	8
III	7.	7	7
VII	8.5	8	9

XII. GENERAL SUMMARY.

Financial Support of the School System.

1. How much education and how good an education a community actually gets for its children depends, first, on how much money it spends, and, second, on whether or not it uses each dollar appropriated so as to get the best and largest educational return.

2. Bridgeport spends annually for public schools more than a third of a million dollars received from local taxes, state funds, and tuition fees.

3. Bridgeport spends $26.81 each year for the education of each school child, while the average for 11 other cities of similar size is $41.13. To put the Bridgeport schools on a par with those of the average city of like population would cost about $200,000 additional per year.

4. Bridgeport teachers receive lower salaries and teach larger classes than do those of any other city compared, which means that Bridgeport children receive cheaper teaching and less of it than the children of the other cities.

5. Bridgeport spends less per child for every separate item of school expenditure than does the average city of like size, which means that Bridgeport children get a smaller quantity or a lower quality of every sort of educational opportunity than do the children of the other cities.

6. Bridgeport citizens spend less per capita for city support than do those of any other city of similar size save one, but they spend less for their public schools than do the citizens of any other city compared.

7. The particular items in which the Bridgeport expenditures are most deficient when compared with those of other cities are the support of the business office of the Board of Education, the purchase of stationery and supplies, the payment of janitors, the support of the Superintendent's office, and the purchase of text-books.

8. Among the 168 towns and cities of Connecticut, Bridgeport ranks second, third, and fourth in seven comparisons of educational resources, and 153d and 154th in two comparisons of educational expenditures.

Differentiation of Functions, Supervision and Organization.

1. All nominations of teachers should be made by the Superintendent of Schools. The Board's function here is to accept or reject.

2. The supervision is notably insufficient in amount. Employ an assistant superintendent and at least one supervisor of primary work, and two assistant supervisors of drawing and hand work. Let the assistant superintendent be a man who, in addition to skill in the supervision of the more traditional subjects, possesses the technical knowledge and practical experience needed in directing the industrial work in the grades and the high school.

3. Employ a stenographer and an additional clerk trained in statistical methods to conserve the time of the Superintendent.

4. Conserve the time of principals for supervision by relieving them of the bookkeeping incident to the penny savings system as now conducted.

5. Carry further and make more systematic the grouping of upper grammar grades in centrally located buildings, and provide for differentiation of work in accordance with the needs of different groups of pupils. Conduct the instruction of these classes on the departmental plan.

6. The schoolrooms are overcrowded and they lack adequate teaching equipment.

7. There are no rooms available in which to organize special classes for foreign-born, backward, and other exceptional children.

8. The city now needs 32 additional rooms to take care of ordinary classes. To provide these rooms at once and, in addition, provide for further needs, involves too great a charge upon the resources of a single year. Future generations may properly be allowed to share the cost of improvements as permanent as schoolhouses.

9. According to generally accepted standards, too few children in the elementary grades are making either rapid or normal progress. Both retardation and elimination are excessive. In the fifth grade 59% of the pupils are over-age and 51% of all pupils enrolled have left school before reaching the sixth grade.

10. The schools are strong in drill processes, less strong in reasoning.

11. It is questionable whether formal examinations should play so prominent a part in the promotion of pupils as they appear to do.

12. The discipline of the schools is superior and the spirit of the teaching force notably good.

13. A higher maximum salary for teachers, if awarded strictly on the basis of merit and not merely on length of service, would be a wise investment.

The City Normal School.

1. The normal school is seriously handicapped by lack of facilities of every kind. It needs more rooms, more teachers, more books and apparatus, and more opportunities for observation work and practice teaching.

2. The entrance requirements are too easy.

3. The local normal school should not furnish more than two-thirds of the teachers appointed annually.

The High School.

1. Many of the obvious weaknesses of the school on the educational side are direct consequences of the unsatisfactory physical conditions under which the work is being conducted.

2. The discipline of the school is good.

3. Too little money is expended on the school to give the boys and girls the educational experiences to which they are entitled.

4. Develop the present commercial course into a coherent four-year course and offer a short clerkship course.

5. Greek is being taken by so few pupils that its retention involves an extravagant use of teacher time in view of the other needs of the school.

6. Provide a two-year course in Latin open to pupils not going to college.

7. Provide an industrial department with a full four-year industrial course and a full four-year domestic science course. Provide shorter courses for boys and girls who will leave at the age of sixteen.

8. In co-operation with the bureau for granting work permits, arrange for vocational guidance.

9. In the new high school building provision should be made for the industrial department.

10. The shops should be strictly industrial both as to the arrangement of their equipment and the type of work done in them.

11. Strengthen the administration of the school, particularly in the line of better supervision: so as to develop more unity of effort and more co-operation among the members of certain departments, and so as to improve the quality of the instruction throughout the school.

Industrial Education.

1. There is a certain minimum of general education which every individual ought to have in order that he may be an intelligent citizen and get a reasonable amount of satisfaction out of life.

2. It is unreasonable to suppose that this necessary minimum of training can be given in less than six years of schooling.

3. No essential part of this general education should be sacrificed in order to include training for industrial efficiency.

4. After the general education has been taken care of, there should be provided for the boys in the last two or three years of the elementary school opportunities for training in a number of lines of practical work for the purpose of developing broad industrial intelligence, under the guidance of competent teachers, and to assist in the choosing of a life-work.

5. General education for girls should be supplemented in the last two or three years of the elementary school by opportunities corresponding to those proposed for boys, and by practical training

in cooking, sewing, dressmaking, millinery, marketing, keeping of household accounts, sanitation and hygiene, for the purpose of helping them to an understanding of the principles of home making.

6. After the completion of the general education, there should be provided opportunities for practical industrial courses, closely related to the activities of the community, open to those boys and girls who elect to take them, which will increase the general industrial intelligence and efficiency of those who must become wage-earners at the earliest possible time.

7. The methods and processes employed in industrial courses should be organized about the making of useful projects, rather than abstract exercises which result in a mere waste of material or scrap.

8. The products resulting from the industrial activities of the school shops, while useful, should not be such as to involve unfair competition with the industries of the community.

9. So far as practicable, the products of the school shops may be those classes of articles of equipment and supplies required for use in the school system itself, and articles which are not produced in the community.

10. The different lines of industrial work should be taught by teachers who are themselves skilled workers in the processes to be taught.

11. The programs of the industrial courses should be based on a study of the requirements of the pupils to be taught. Careful experimentation in various cities seems to have demonstrated that a six-hour day produces the most efficient results for pupils of fourteen to sixteen years of age.

12. The classes should be small enough to make efficient instruction possible in complete processes from raw materials to finished product.

13. The industrial courses should be controlled, under the authority and direction of the Board of Education, by advisory committees which should contain equal representation of wage-earners and employers in the industries concerned.

14. The Board of Education should employ a trained expert to organize and direct the entire scheme of manual training, household training, and industrial courses, and give him sufficient freedom to develop the work.

15. Nothing should be done that will result in diminishing the facilities and opportunities now existing for those boys and girls who desire to continue in a course of general education in order to prepare for high school, college, technical or professional school, etc. Rather, these facilities should be extended and improved in every way possible, and made available for an increasing number

of individuals. The school system must provide opportunities for all boys and girls who are qualified, and have the ambition, to pursue higher courses in professional training that are equal in every respect to those provided for industrial education.

16. A careful study should be made of local conditions, and a modest beginning made in those directions where the needs seem to be most immediate and pressing, subsequent expansion being based on continued study and experimentation.

17. Provision should be made of opportunities for supplemental instruction in general education, or industrial education, or both, for workers already engaged in the industries.

Course of Study, Geography, History, Arithmetic, etc.

1. If the directions in the course of study were expanded into a syllabus of each subject, and the requirements under each grade stated under subject headings rather than by pages in the text books, it would have added usefulness.

2. The division of the time allotted to given studies between study and recitation has much to commend it.

3. The work in geography deserves special commendation.

4. The work in history and citizenship ought to receive the same earnest attention that has made the work in geography so satisfactory.

5. In arithmetic the emphasis is rightly placed on fundamental operations and intelligent solution of problems. Bridgeport pupils who complete the sixth grade take high rank in this subject.

6. It would be well to make careful study of the effect of the relatively high requirements in arithmetic upon promotion, particularly in the lower grades.

English.

1. The work in English lacks unity. Spelling, punctuation, and technical grammar are taught as ends in themselves, not as aids to self-expression.

2. The course of study in English is indefinite and general. Technical grammar is given more time than composition.

3. Reading is taught in a uniform manner throughout the system. The method used is, for the greater part, based upon a knowledge and use of phonetics. Objective teaching is thus neglected. The same texts are used in the schools composed of foreigners as in those attended by Americans.

4. There is little uniformity in the teaching of oral composition. This work, however, is admirably done in some schools.

5. Little emphasis is given to plan work. As a result the compositions often show an illogical arrangement of thoughts and a slight feeling for the relative value of ideas.

6. The penmanship, as a whole, is fairly satisfactory.

7. The work in each grade should be unified with English as a basis. Spelling, punctuation, phonetics, and technical grammar should always be taught as aids to self-expression, not as an end in themselves.

8. Revise the course of study in English giving definite and detailed directions for the teaching of composition. Give more emphasis to composition teaching, less to technical grammar.

9. Give language lessons preparatory to reading. Depend less upon phonetics and more upon connecting the printed text with the thought to be conveyed by the reader. Use in the schools composed almost entirely of foreigners texts expressly prepared for the language training of such children.

10. Emphasize oral composition. Train the children, in all work, to talk in paragraph units. Use this oral work as an immediate preparation for written composition.

11. Have the children make outlines before attempting any oral and written composition work. This should develop a logical arrangement of thought and a greater feeling for the relative value of ideas.

12. The course in English literature and composition offered in the Normal School should aim to increase the scholarship of the pupil-teachers in English as well as to suggest good methods of teaching. Such a course would enable them later to do original and progressive work in the grades.

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